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Merchandising Appliances

The claim that electrical contracting and the merchandising of electrical appliances are two separate and distinct businesses and should have no connection, is about as preposterous as to claim that the man who sells drugs should not fill prescriptions; for the one who makes the assertion offers no other reason than that the contractor does not have time to run a store.

Destruction is so much easier than construction, that the shortsighted individual who would destroy the contractor-dealer combination has not undertaken the task of making even a suggestion as to how electrical merchandise should be marketed to the public.

Let us suppose that the one who sets himself up as an arbiter of the present custom proposes to dispose of electrical goods solely through hardware stores. In so far as service goes he might as well market electrical goods through grocery stores. The hardware dealer already has his troubles, having inherited many of them from past generations.

A smooth salesman often induces the hardware dealer to take the sale of an electric washer, for instance, and before night that enamelled beauty is disfigured by smutty hands, scratched by garden rakes, marred by digging the south end of a lawn mower into its pretty sides, and completely hidden from view by joints of stove pipe, fencing wire, and scoop shovels.

Electrical appliances in hardware stores get just about as much attention as any one of the other thousand and one articles in such stores. At the same time the electrical goods in hardware stores are in direct competition with non-electrical goods that are designed for similar purposes. There is just as much of an object in the hardware dealer recommending one article as another.

The same argument applies to department stores, novelty and notion stores, and all other retail stores. Each has its own particular line, which is sufficient to occupy the entire time and attention of the dealer and his associates.

But let the department store and the hardware store handle electrical appliances—as some of them do now. These stores have no way of rendering service. When the appliance fails to function, the owner takes it to the contractor-dealer for repairs; or else it is discarded in disgust, which is about the worst thing that can happen, for this reflects on every branch of the electrical industry.

The contractor-dealer is beyond all doubt the most logical and natural retailer of electrical appliances. The most unintelligent grocery clerk might be able to sell a watch, for example; but neither the Waltham nor the Ingersoll companies would market their product through grocery stores, and they represent the two extremes of the watch industry. Watches are sold by jewelers, who also render the service required by these intricate pieces of mechanism.

Electric service as applied to appliances is a profession. The contractor-dealer started in business only a few years ago. He was then a mechanic. He had to learn the art of merchandising and the profession of servicing.

The average manufacturer and supply jobber expected him to become wholly competent to properly perform those duties in about a month's time. They do not stop to consider that many years of hard study and preparedness are required to fit one to engage in any other profession or art.

As a matter of fact the contractor-dealer has made rapid strides in the past few years. He is progressing perhaps more rapidly than those in any other line. He will continue to advance if he is encouraged. But he cannot do the impossible—he cannot make a market where none exists—he cannot force the public to purchase at prices far above normal figures.

Not only is the contractor-dealer the logical retailer of electrical appliances, but eventually he will be the only retailer of electrical goods, for the public is learning that service can be had from no other source. And in making calculations as to who is to be the retailer of the electrical industry the public must be considered. It already sees that it pays to buy electrical goods from contractor-dealer stores.

New Tabulation of Code

With the presentation in the May issue of this magazine of the first installment of "The Code at a Glance," many there were who looked at it askance—out of one corner of the eye, as it were, and somewhat distrustfully.

It was not long thereafter until discussion arose concerning its usefulness—its advantages, conveniences, and benefits. Then inquiries began to pour in asking if it could not be printed in handier form for everyday use.

Thus it was seen that "The Code at a Glance" had been accepted and would be put to the purpose for which it originally was intended.

To go back to its conception, the author, Hubert S. Wynkoop, M. E., had for many years been reviewing Code violations that had passed over his desk as chief inspector of Greater New York. He realized that the larger portion of these violations were due to the difficulty of instantly

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finding the Code information applicable to the particular point in question at the time the violation occurred.

Mr. Wynkoop then made it his problem to devise a method of presenting Code requirements in a simpler form in order to obviate trouble and annoyance arising from misunderstandings. "The Code at a Glance" is the result of his study and research along those lines.

As originally announced, there was no attempt to interpret the Code, or to change it in any manner, except that of arrangement. All correlating subjects were placed together and then arranged in alphabetical form. So it now becomes an alphabetical tabulation of the requirements of the National Electrical Code.

After presenting it in these columns in its original form, and finding that there is a demand for it in book form, it has been decided to at once reprint it in single column pages of convenient size for carrying in the pocket. The last installment of the magazine series is published on other pages of this issue, and as soon as these can be rearranged, the entire series will be published and placed on sale by the National Association of Electrical Contractors and Dealers.

It is hoped that the first edition of this new and useful book, "The Code at a Glance," will be ready for distribution some time during this month. An announcement to this effect will be found in the advertising sections of this issue.

From present indications the demand for this new book will be unusually large and applications for it will be filled in the order in which they are received. Those desiring copies of the first edition should notify the publishers at once so that deliveries may not be delayed.

Scientific Methods

The timid business man is likely to back away from that word scientific. To the old timer it means the taking on of new fangled notions that are sure to end in the upsetting of all his old fashioned ideas. To the novice in business, who is unskilled in the tricks of the trade, scientific methods would appear to be beyond his comprehension and too complicated for his use.

Yet science means the understanding of the truth of any subject. It is amassed knowledge—the whole facts in the case. What less should any man know of his own business?

Today practically all commercial pursuits—manufacturing, wholesaling and retailing—to be successful in the highest degree, must be conducted along scientific lines. That is, the promoters of such enterprises must possess full and complete knowledge of all the truths and facts concerning that particular business. Even the artisan, the professional man, the artist, and every other man that buys and sells for himself or deals in the product of his own brain or hands, must have an exact knowledge of his stock in trade. He must be able to coördinate, arrange, and systematize his products to fit the requirements of the public and to supply all demands.

The electrical contractor-dealer is not an exception to this general rule. He cannot stand back and demand from the manufacturer or supply jobber certain practices heretofore unknown to any line of trade. Neither can he require the public to take whatever he sees fit to offer, without regard to the public taste or choice.

On the other hand, the contractor-dealer must study his business problems—must make a scientific study of them—and after acquiring a thorough knowledge of all the facts concerning his business, he must carefully choose from the supply jobber the manufactured goods that seem best fitted for his particular trade. These he will offer to the public through prescribed methods and fully understanding the whole situation he will not hesitate to stand back of every article so offered.

That is all there is to doing business on scientific methods—to know the goods; to understand the business; to serve the public in the best manner possible.

Although back of all this there also is scientific buying; scientific accounting; scientific management; scientific financing; and withal, scientific merchandising. But the scientific part of it all goes back to the same principles—knowledge and understanding of the facts and truths of the subject.

Modern business men should no longer be afraid of scientific methods. They are harmless and not at all difficult to comprehend. And they lead to advancement, progress, success—what every honest contractor-dealer is seeking.

Cost Accounting

One of the very important departments recently created by the Chamber of Commerce of the United States is to take up the question of cost accounting, with a view to formulating a uniform system that can be adopted by the various industries to which the membership belongs.

When an organization of such extensive scope and high ideals takes up a question of this nature it should be at once recognized that the young and aspiring contractor-dealer is at least a few steps ahead in this respect, for the Standard Cost Accounting System adopted by the National Association of Electrical Contractors and Dealers is already several years old and working successfully.

The contractor-dealer's cost system also conforms with those of other branches of the electrical industry, which makes it of greater value, a point that is stressed in the recommendations of the Chamber's new department, and one that is perhaps too litle appreciated by the National Association membership.

In a pamphlet setting forth the merits of cost keeping in general, it is said that one of the very important matters relating to business operations, and one in which a number of records are involved is cost accounting.

Individuals' memories are limited in the number of accurate records which they can retain. Business consists of transpiring events, all of which must be properly attended to. The solution of the problem of securing reliable records of many transactions without depending upon the fallibility of memory has been through systematic methods for conducting the operations of business.

No one enters business to fail, but the majority who do lose out do so from various causes, but principally because they disregard the question of costs. The worst competition is largely from those who do not know what it costs them to produce and do business. When normal production returns, competition will force closer margins and costs must then be known.

Cost systems, both as to manufacturing and selling, should tie in with the general accounting records so that financial statements drawn will reflect all conditions of the business accurately.

When a business operates without a cost system, it is in the same position as a boat without a rudder, tossed about by the winds and directed by sources outside of those supposed to be in control, and driven towards an end which is not definite and perhaps not the one desired.

The Chamber's committee believes that a practical, usable cost system should not be complex, but lean toward simplicity. Neither should it require an investment out of proportion to the benefits to be acquired. It should be considered a piece of necessary equipment and treated accordingly; it will return its proportion of dividends on the money paid for it.

No better evidence of the importance and value of accurate accounting in business can be found than is shown by this report of the Chamber of Commerce. Contractor-dealers who are not using their own efficient system should lose no time in adopting it.

Reducing Expenses

It is so much easier to add an item of expense to the overhead than it is to cut off an item. In flush times, when business is on the boom, an added dollar here and another one there does not seem to amount to much. And so the cost of doing business rolls up to an extravagant sum.

But there comes a time when we feel that we must retrench—when expenses must be curtailed—and there is where common sense becomes a valuable asset. The man who can instantly put his finger on the items that are to be cut down, or entirely cut off, is earning more than he is paid these days.

When customers stood around our doors waiting for goods—at any price, and on a rapidly advancing market—which custom was quite general in the United States during the past few years—expense of doing business meant so little that the sky was the limit. The spendthrift son of a wealthy father could not have been more profligate than were some of our war profits merchandisers.

Salaries were raised beyond all reason; credits were extended without restriction; all items of expense were increased indiscriminately; and when the remaining surplus still seemed too large, an extravagant sum was invested in advertising.

Working on the theory that a fool and his money are soon parted, those who try to make a living without work hatched up all kinds of schemes to separate the merchant from his net earnings. And the merchant was an easy victim simply because he was not afraid of expanding his merchandising expense, as he is in normal times.

Then came an end to it—when the public demanded lower prices. Then those who had danced were compelled to settle with the fiddler. To dispose of his wares at reduced prices and still make a profit, the merchant had to reduce his expense of doing business. He had to cut down his items of expense.

Some merchants started their campaign of retrenchment by cutting off the only stimulent their business possibly could have—advertising. Like an insurance policy, the only way in which the full benefits of advertising can be realized is by keeping up the premiums; or like a saving account, when the principal is withdrawn, the interest stops. In dull times, business should be kept alive by advertising.

Other merchants made the mistake of ruthlessly reducing all salaries, thereby instantly killing all incentive and destroying all loyality at one full swoop. How much better it would have been to have weeded out the incompetents and thereby increase the efficiency.

Merchants who have passed through such periods of depression before are sitting tight—not inactive, however. As a matter of fact, they are more active than at normal times. In the first place, they had not increased their cost of doing business inordinately or without reason. Hence it was an easy matter to trim off a little excess here and there on various expense items.

Such merchants began early to take their losses. They figured their profits on repurchase prices, persistently advertised their reductions, and immediately replaced their wares at the lowered prices. They took the time to weed out their incompetent help and to expend more effort in instructing and encouraging those that were retained.

When we walk up street and meet a dozen men that are complaining of business conditions, we think of the dozen other men who have tuned up their business to fit circumstances. The latter take an optimistic view of the future because they are in tune with the present. They saw this condition coming, and they met it fairly and squarely without flinching. They are now comfortably set for the greater things that are on the way.

Get Acquainted at Buffalo

One of the most pleasing features of any large gathering of business men is the opportunity it affords for making new acquaintances. Of course there are the renewals of old friendships that go along with the meeting of new friends—and both are conducive to a feeling of cameraderie that adds largely to the joy of living.

The Anniversary Convention of the National Association of Electrical Contractors and Dealers at Buffalo this month will bring together groups of men from all sections of the United States and Canada. These men may not be all of one mind, nor of one kind, but surely they have many things in common. They represent that branch of the great electrical industry which is successfully selling the electrical idea to the public.

Due credit must be accorded to the manufacturer, the supply jobber, the central station, and to all other branches of the electrical industry that give publicity to electricity; but when all is said and done, the electrical contractor-dealer is the one, and the only one, whose duty and privilege it is to sit down with the public and have a heart to heart talk about that wiring job, or the new installation, or the blamed old appliance that goes wrong, or the blown fuse, or the hundred and one other intricate questions that arise daily with users of electricity.

Manufacturers are supposed to meet the public not at all—according to established trade ethics; the supply jobbers' connection with the public is through the retailer; and the central station is looked upon by the public in the same way that a rent boosting landlord is looked upon by the distressed tenant.

Of course this is wrong, and it is pretty much the fault of the fickle public. Through good will advertising the central station, encouraged and supported by the manufacturer, is endeavoring to break down the barrier between itself and the public. The process is slow and expensive.

The quickest and surest way for any manufacturer, supply jobber, or central station to get the good will of the public is through the contractor-dealer. Get acquainted with him, cultivate him, instruct him, help him, and use

him—not for selfish purposes, but as a ready means of getting into close touch with the public.

The result of this will be a benefit to the entire industry. It will take the public into the coöperative movement in which all branches of the electrical industry are working together. Until the public thoroughly understands that all of these efforts will result in its betterment, it will not so readily become a party to the transaction.

Then let us all get acquainted. Let representatives from every branch of the electrical industry come together in Buffalo this month. Let them all meet in the spirit of friendliness. Let there be an exchange of ideas. The public is to be reckoned with—how is the best way to handle the proposition? Talk it over together. Come to an understanding.

Members of the National Association of Electrical Contractors and Dealers should be particularly desirous of making this big Anniversary Convention a huge success. If each member of the National Association will take with him to Buffalo one or more men from outside of the organization—either contractor-dealers or from other branches of the industry—and then see to it that everybody gets acquainted, the Buffalo Meeting will go down in history as a record breaker.

Anyhow, let the organized contractor-dealer do his part. All of the convention sessions are open to the public. Welcome the strangers—learn their names and introduce them to others. Every member should appoint himself to an active membership on the committee of introduction. Make everybody welcome!

The Code at a Glance—Part III

A Tabulation of the Requirements of the National Electrical Code

By Hubert S. Wynkoop, M. E.
In Charge of Electrical Inspection, City of New York

[Note—This is the third and last installment of Mr. Wynkoop's alphabetical tabulation of Code Requirements. There has been such a demand for extra copies of the Electrical Contractor-Dealer magazine containing these articles that it has been decided to at once print them in book form for convenient use. An announcement of details relating to this matter will be found in the advertising pages of this issue.—The Editor.]

LVII. REACTIVE COILS

See Resistances.

LVIII. RECEPTACLES

See Fixtures.

LIX. REGULATORS

See Resistances.

LX. RESISTANCES

1. Choke Coils for Lightning Arresters

a. Insulation must equal that in other parts of circuit.

2. Compensator Coils for Arc Lamps

a. Mount on insulators giving a clearance of 1 inch between frame and support.

b. Treat as sources of heat.

3. Condensers

a. Non-combustible cases and supports.

b. Isolate from all combustible materials.

c. Treat as sources of heat.

4. Economy Coils for Arc Lamps

a Mount on insulators giving a clearance of 1 inch between frame and support.

b. Treat as sources of heat.

5. Equalizers

These are merely resistances.

6. Incandescent Lamps

a. May be used in central stations as resistances, by special permission; see Code No. 4.

b. May be used in central stations as protective resistances, if "they do not carry or control the main current nor constitute the regulating resistance of the device"; see Code No. 4b.

7. Induction Coils

a. Non-combustible cases and supports.

b. Isolate from all combustible materials.

c. Treat as sources of heat.

8. Reactive Coils

a. Non-combustible cases and supports.

b. Isolate from all combustible material.

c. Treat as sources of heat.

9. Regulators for Mercury Vapor Lamps

a. Inclose; ventilated openings to be protected by fine mesh wire gauze where subject to flyings of lint or combustible material.

b. Treat as sources of heat.

10. Resistances

a. In central stations, on a switchboard; or at a distance of 1 foot from combustible mate-

PAST PRESIDENTS—I

Charles L. Eidlitz

Mr. Eidlitz was one of the founders of the National organization, and was its first president. He was engaged in the electrical contracting business for twenty-six years in New York City, retiring therefrom in 1914 to engage in manufacturing lines. For the past few years Mr. Eidlitz has devoted his able efforts to the management of several companies allied with the electrical industry. Although a strong advocate of organization work, Mr. Eidlitz has been unable to devote much time to the National Association since his retirement from the contracting field, but he has consented to take part in the anniversary program at Buffalo this month.

rial; or separated therefrom by a slab of non-combustible, non-absorptive insulating material larger than the device and independently fastened in place; no slab less than ½ inch; bolt heads countersunk at least ⅛ inch, and sealed.

b. Inclosed, and with dustproof faceplates, if in dusty or linty places or where exposed to flyings of combustible material.

c. ¼ inch clearance between casing and supporting surface.

d. Identified terminals for motor starting rheostat.

e. Dead segment for off position of motor starting rheostat.

f. Spring release for motor start- rheostat.

g. No-voltage release required for D. C. starters.

h.

"Wherever insulated wire is used for connections between resistance elements and the contact device of a rheostat, except for motor starting service, the insulation must be non-combustible, or slow-burning. For large rheostats and similar resistances where the contact devices are not mounted upon them the connecting wires having slow-burning insulation may be so arranged in groups that the maximum difference of potential between any two wires in any group shall not exceed seventy-five volts. Each group of wires must either be mounted on non-combustible, non-absorptive insulators giving at least one-half inch separation from surface wired over, or, especially where it is necessary to protect same from mechanical injury, each group of wires may be encased in approved flexible tubing and placed in approved conduit, the flexible tubing to extend at least one inch beyond the ends of the conduit."

11. Rheostats

These are merely adjustable resistances.

LXI. RHEOSTATS

See Resistances.

LXII. SERIES ARC LIGHTING

1. Location: Exposed, when special permission has been granted.
2. Voltage: Not exceeding 5,000 volts, constant current.
3. Insulation: Rubber.
4. Method of wiring: As for open work in damp places, except that wires of opposite polarity must be kept 8 inches apart.
5. Service switch: Double contact type, non-arcing, closing main circuit and disconnecting branch in one continuous operation, mounted in a non-combustible case located where free from moisture and accessible to police and firemen. It must indicate whether "on" or "off."
6. Incandescent lamps: "No electromagnetic device for switches and no multiple-series or series-multiple system of lighting will be approved."

LXIII. SERVICES

1. Location

From pole line to service point, and not protected by fuses.

2. Voltage

Not exceeding 600, constant potential, except by special permission.

3. Insulation

Rubber, from service point to first support outside building; rubber or weatherproof, from first support outside building, along building to pole; rubber, for multiple conductor cable or for wires in conduit.

4. Supports

Petticoat insulators (or knobs on racks or brackets) where wires are not liable to come in contact with awnings, swinging signs or other moveable objects; otherwise, in conduit.

5. Spacings

a. Place supports at intervals not exceeding 15 feet where wires are separated 1 foot, and not exceeding 9 feet where wires are separated 6 inches. Avoid use of roof structures.

b. Between roof and wires crossing above, 8 feet.

c. Between wires of opposite polarity, not supported on cable racks or brackets, 1 foot.

d. Between wires of opposite polarity, supported on cable racks or brackets, 6 inches.

e. Between multiple conductor cables and woodwork, 6 inches (12 inches from overhanging combustible material), unless a protective fitting (service head) is used.

6. Drip Loop

At point of entrance, open wires sloping upward toward inside of building; or place a service head or gooseneck on conduit.

7. Conductors

Not smaller than No. 10 if soft drawn, or No. 12 if medium or hard drawn.

8. Grounding

a. Metallic sheaths of cables must be grounded.

b. Service conduit need not be electrically connected to a grounded service cabinet or other grounded fitting if insulated from ground and, if necessary, "either isolated or guarded when within reach from grounded surfaces."

c. Ground all constant potential systems, except furnace circuits and those which are entirely unexposed to leakage or induction from circuits operating at a potential exceeding 600 volts. See Grounding.

9. Warning

a. Do not install a service so that it will assist in forming within a building a shunt around any street fuse or switch.

PAST PRESIDENTS—II

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Ernest McCleary

The second president, Ernest McCleary, was elected to office when the third annual convention met at Detroit, Michigan, in 1903. Mr. McCleary began his electrical career with The Michigan Bell Company in 1885. In 1900 he became senior member of the firm of the McCleary & Colquitt Company, Detroit, where he is still in business under the name of McCleary-Harmon Company. Mr. McCleary has been an active and conscientious worker in the interests of the National Association.

b. Guard against moisture, mechanical injury and gas leaks at underground service entrance.

c. Keep combustible material away from the immediate vicinity of service entrance.

d. Obtain special permission before making an inter-building connection.

LXIV. SIGNALING SYSTEMS

Omitted, except Radio.

LXV. SIGNS

1. Material and Construction

a. Metal of not less than No. 28 U. S. gage (.0156 in.) or other non-combustible material. (Wood may be used externally for decoration if kept 2 inches distant from receptacles.)

b. Must be practically weatherproof, and inclosing all terminals and wiring other than supply leads. For exception, see Roof and Ground Signs.

c. A weatherproof, accessible cabinet must be provided for non-weatherproof transformers, cutouts, flashers, etc., if on or within body of sign.

d. Each compartment must have a ¼ inch drainage hole.

2. Wiring

a. Conduit work or lead sheathed armored cable for exterior of sign structure, except for roof and ground signs.

b. Not over 1,320 watts on final cutout.

c. Leads from sign, if exposed, must be neatly cabled and passed through insulating bushings.

3. Receptacles

a. Design must be such as to prevent turning.

b. Wires to be soldered to terminals and treated to prevent corrosion.

c. Terminals to be kept ½ inch from other terminals and metal of sign.

d. Miniature receptacles not permitted for outdoor use.

4. Roof and Ground Signs

a. Open work permitted, where not subject to mechanical injury. See Outline Lighting and Wiring Methods.

5. Specifications

See Code No. 83.

LXVI. SOCKETS

See Fixtures.

LXVII. SWITCHES

1. At Service

a. Must plainly indicate whether open or closed.

b. Must disconnect all wires, except that a strap may be used instead of a blade in the grounded conductor.

c. At the nearest accessible point to service entrance.

d. Before the fuses, unless a combined service and meter cabinet is used.

e. Inclosed, and preferably of the externally operated type.

f. "With three-wire direct-current or single-phase systems with grounded neutral, the service switch may be so designed as to permit either outside wire to be opened independently of the other, but the design must be such that the neutral cannot be opened without opening both outside wires."

PAST PRESIDENTS—III

Gerry M. Sanborn

At the Eighth Annual Meeting of the National Association held at Chicago, Mr. Sanborn was elected president. He was born in Indianapolis, Indiana, where he is at present in the contractor-dealer business under the firm name of the Sanborn Electric Company. He is a prominent member of the National Executive Committee at the present time, and for the past twenty years has been closely identified with the work of the National Association.

g. In private plants the leads from yard wires are not considered to be service wires, if proper switch control is provided at some point nearer the supply.

2. Generally

a. In dry and accessible places, and grouped as far as possible.

b. Single throw switch must open downward.

c. Double throw switch must swing horizontally, unless a locking device is used.

d. Blades must be dead, where practicable, when switch is open.

e. A metal box must be used with a flush switch. If approved fittings are absent, the box must be supported by ⅞ inch block fastened between studs flush with back of lath, or wooden base blocks not less than ⅜ inch thick must be screwed to lath.

f. Sub bases must be provided for surface switches for open work.

g. Hardwood base blocks must be provided for surface switches for wooden raceway work, unless the switch is designed for direct mounting.

h. An inclosure must be provided for a switch exposed to mechanical injury, or in the immediate vicinity of easily ignitible stuff, or where exposed to inflammable gases or dust or flyings of combustible material, or in locations classed as "extra hazardous," or where exposed to moisture.

3. Single Pole

a. In the 2-wire branch or tap circuit supplying not more than 660 watts.

b. For a 2-wire motor of ¼ h. p. or less on a circuit not exceeding 300 volts.

c. For remote or automatic control, where in series with a multiple pole switch.

d. As service switch for 3-wire D. C. or 3-wire single phase with grounded neutral.

e. For cars and car houses.

f. A 3-way switch is classed as single pole.

4. Multiple Pole

a. Must break all wires of a circuit other than a grounded

conductor, except as noted under single pole.

5. For Motors

a. "Where a double throw switch is used to shunt the motor protective device during the starting period it must be of such type that it will be held in off and running positions but cannot be left in the starting position."

b. Must be of indicating type.

c. Must be located (together with starting device) in sight of motor, unless special permission is granted to locate it elsewhere.

d. "Except for auto starters the switch called for in the preceding paragraph may be omitted when the motor starter disconnects all wires of the circuit. When auto starters are used a switch must be provided on the supply side of each auto starter or group of auto starters and the switch must be within sight of the starters or starter controlled."

6. Circuit Breakers

a. "An automatic circuit breaker which disconnects all wires of the circuit may also serve as a switch," (Circuit breakers are permitted only where under competent supervision.)

b. "Except as provided for generators in No. 1 *d* an automatic overload circuit breaker when installed without other automatic overload protective devices, must have one pole in each ungrounded conductor, except that for branch or tap circuits which are directly connected to lamp sockets or other translating devices a pole must be provided in each conductor and it must be so designed that its operation will open all of the conductors simultaneously. This rule will not be considered as prohibiting the use of two single pole circuit breakers for the protection of two-wire circuits. The number of overload trip coils must not be less than shown below:

System	Number of Overload Trip Coils
4 wire, 3 phase A. C.	3—(1 in each phase)
4 wire, 2 phase A. C.	2—(1 in each phase)
3 wire, 3 phase A. C.	2—(1 in each of 2 phases)
3 wire, 2 phase A. C.	2—(1 in each outside conductor)
3 wire, 1 phase A. C.	2—(1 in each outside conductor)
3 wire, D. C.	2—(1 in each outside conductor)
2 wire, A. C. or D. C. ungrounded	1
2 wire, A. C. or D. C. grounded	1—(in the ungrounded conductor)

"If a circuit breaker is also used in place of the switch it must be so arranged that no one pole can be opened manually without opening all poles."

7. Specifications

See Code Nos. 65 and 66.

LXVIII. SWITCHBOARDS

a. "Must be so placed as to reduce to a minimum the danger of communicating fire to adjacent combustible material."

b. Clearances: 3 feet from ceiling; 18 inches between wall and apparatus on back of board.

c. Non-combustible material.

d. Kept free from moisture.

e. Accessible from all sides when connections are on back.

f. Space in rear to be kept clear of rubbish and not used for storage.

g. See Panel Boards.

LXIX. THEATRES AND MOVING PICTURE ESTABLISHMENTS

1. Services

a. Two service cutouts and switches, one for emergency lights, the other for general lighting.

b. Each service to be supplied by a separate street main; if there is but one main, split the service just within building.

c. If source of supply is an isolated plant, an outside source of supply or a storage battery must be provided for emergency lights.

2. Switchboards

a. Dead-front, with metal hood.

b. "Dimmers must be dead when the switch controlling circuit of which dimmer is a part is open."

3. Auditorium

a. Metal raceway, armored cable or conduit only.

b. Fuses and receptacles must be inclosed.

c. Emergency lights "must be fed independently of the stage lighting, and must be controlled only from the lobby or other convenient place in front of the house."

4. Stage

a. For general wiring: Armored cable or conduit only.

b. For Footlights: Armored cable, conduit or metal trough only; receptacles inclosed, not more than 32 per cutout.

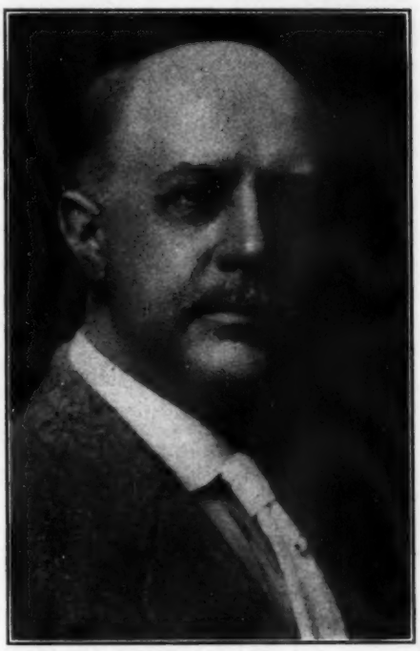
c. Border and proscenium sidelights: As for footlights; lamps guarded from mechanical injury and combustible material by flanges of reflectors or other suitable guards. If a wire suspension rope is used, at least one strain insulator must be inserted in it at the border. Use slow-burning insulation in the border proper. Cables must be no longer than necessary to permit the raising and lowering of border.

d. Stage and gallery pockets: Insulate from ground and control from switchboard. Arc pockets, capacity 35 amperes, fed by No. 6; incandescent pockets, capacity 15 amperes, fed by No. 12; plugs for arcs and incandescents to be non-interchangeable.

e. Scene docks: Locate lamps so that they will not be liable to mechanical injury.

f. Control for flues: Electrical release devices for dampers must operate on a closed circuit; magnet operating damper must be wound for full circuit voltage and must be located in loft above scenery and contained in a metal box having a tight, self-closing door.

PAST PRESIDENTS—IV



Marshall L. Barnes (Deceased)

The fifth president of the National Association was Marshall L. Barnes of Troy, N. Y., who was elected at the Tenth Annual Convention held in Atlantic City on July 21, 1910. Mr. Barnes was the first president of the National Association to depart from this life, having passed away on December 5, 1914. He was an earnest and conscientious officer and was beloved by all who knew him.

g. Specifications for troughs: See Signs and Code Nos. 38d and 83.

5. Dressing Rooms

a. Armored cable or conduit for permanent wiring.

b. Pendants: Reinforced cord, armored cord or armored cable.

c. Lamps: Within locked or sealed guards.

6. Portable Equipment

a. Arc lamps: A competent operator for each lamp, "except that one operator may have charge of two lamps when they are not more than 10 feet apart, and are so located that he can properly watch and care for both lamps." For specifications, see Code No. 38k.

b. Bunches: No exposed wiring.

c. Strips: For specifications, see Code 38m.

d. Plugging boxes: All current carrying parts to be guarded; for specifications, see Code No. 38n.

e. Connectors: Female part on live end of cable.

f. Conductors: Stage cable; but a stand lamp may be fed by reinforced cord if the latter is not liable to severe mechanical injury.

g. Lights on scenery: Brackets wired internally; stems must extend through to back of scenery.

h. String or festoon light: Guards for lamps in lanterns.

i. Special electrical effects (lightning, waterfalls, etc.): "The apparatus must be so constructed and located that flames, sparks, etc., resulting from the operation cannot come in contact with combustible material."

7. See Moving Picture Equipment

LXX. TRANSFORMERS

1. Location

a. In other than central stations or substations: Only by special permission if over 600 volts, or if oil filled.

b. Attached to buildings: Only by special permission if over 600 volts.

—Separated from building by substantial supports.

c. In buildings and over 600 volts: As close as possible to point where primary wires enter building.

—In an inclosure of fire-resisting material.

—6 inches clearance around transformer.

—Inclosure locked, accessible only to authorized persons.

—Thoroughly ventilated, preferably through a flue or chimney to the outside air.

d. Mount (except bell ringing) like a rheostat.

e. Air cooled, in central stations: Place so that burning out of coils can do no harm.

—Fireproof ducts for air blast.

—Isolate from other equipment.

f. Oil-filled, in central stations: In separate fireproof compartment, with 6-inch sill and drained to outdoors.

g. Bell ringing: Not over 250 volts on primary.

PAST PRESIDENTS—V

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Ernest Freeman

It was in Denver, Colorado, that Mr. Freeman was elected president, the event being the Twelfth Annual Convention held in July, 1912. Mr. Freeman is a native of Massachusetts, but first entered business life in the state of Maine. He afterward removed to Chicago and engaged in the electrical business, in which he still continues as a senior member of the Freeman-Sweet Company of Chicago. Mr. Freeman is an ardent supporter of the National Association, which he served in various capacities for many years.

2. Vaults

(For oil-immersed transformers at over 600 volts in buildings other than central or substations.)

a. Six inches of concrete, or 8 inches of brick; but if total contained capacity is not over 100 KVA thickness may be reduced to 4 inches by special permission.

b. Built preferably against an outside wall.

c. Ventilation: To secure temperature not exceeding limit set by A. I. E. E.

—Damper in each vent not connected to a flue.

—Damper control preferably outside vault.

d. Drain: To carry off escaping oil or water.

—Pitch of floor and drain, not less than ¼ inch per foot.

—Where contained capacity does not exceed 100 KVA drain may be omitted if the vault will retain all the oil.

e. Doorway: Tight-fitting fire door.

—Four-inch sill, or high enough to retain all oil from largest transformer.

3. Oil Switches Controlling Transformers

a. Preferably in the vault.

4. Grounding

a. Ground case, unless it is an instrument transformer, isolated or guarded.

LXXI. VAPOR LAMPS

See Incandescent Lamps.

LXXII. WIRES

See Conductors.

LXXIII. WIRING METHODS (LOW POTENTIAL)

1. Open Work

a. General.

—May be run wherever wires can be protected from mechanical injury and the voltage does not exceed 600 volts, constant potential—but not in elevator cars, elevator shafts, extra hazardous locations, garages, moving picture establishments, moving picture studios, and theatres.

—Cleats or knobs at intervals not exceeding 4½ feet. Reduce interval if wire is liable to be disturbed. In buildings of mill construction wires not

smaller than No. 8 may be supported at each timber only, if separated at least 8 inches from an adjacent wire or foreign object and not liable to be disturbed. For specifications, see Code No. 61.

—Two screws must be used with a split knob supporting a wire larger than No. 4.

—A tie wire (having similar insulation) must be used to secure a wire larger than No. 10 to a solid knob.

—A cushion washer must be used with a nail securing a split knob or cleat. Length of nail: 1½ times thickness of knob and twice thickness of cleat.

—"Running board," ½ inch by 3 inches, for wires crossing under floor beams; or "guard strips, ⅞ inch thick and as high as the insulating supports."

—Boxing, 7 feet high, closed at top, giving a clearance of 1 inch around wires, for wires on side walls; or continuous length of flexible tubing over each wire, all wires of a circuit then placed in a metal pipe, extending the tubing in either direction to the nearest insulating support. The wooden boxing is preferable for damp places.

—Where passing through a timber, partition, wall or side of cabinet place porcelain bushing or tube. If the tube is not long enough, place 2 tubes end to end in an iron pipe; or (if the location is dry) use flexible tubing and iron pipe as described in preceding subparagraph.

—Wires closely grouped back of switchboards, in wire towers, cableways, etc., must be covered with flameproofing (asbestos hose or tape) if not already provided with slow burning insulation.

—Wires passing pipes should be run over, rather than under the latter.

—The entrance of a wire into a cabinet or boxing must be dustproofed, generally by taping.

—The air space between open wires is specified for each method of wiring. Where the separation cannot be maintained a firmly fixed additional insulation (porcelain tube or flexible tubing) must be employed. Only 1 wire in a bushing, tube or length of flexible tubing.

—A signaling wire must be kept 2 inches from a light, heat or power wire.

—Do not dead end a wire at a rosette, socket or receptacle, unless the last support is within 12 inches.

—Do not lay a wire in plaster, cement or similar finish.

—Do not fasten a wire to any surface except by insulating supports.

b. Dry places.

—Insulation: Rubber, varnished cloth (No. 6 and larger), slow burning weatherproof (flameproofing on outside), slow burning.

—Supports: Knobs or cleats, spaced as follows:

Voltage	Dist. from surface	Distance bet. wires
0-300	½ inch	2½ inches
301-600	½ inch	4 inches

PAST PRESIDENTS—VI

John R. Galloway

Mr. Galloway was elected to the office of president at the Fourteenth Annual Meeting which was held at Detroit, Michigan, on July 16, 1914. He was born in Baltimore county, Maryland, removing to Washington, D. C., while a young man and entering the electrical field a few years thereafter. He still resides in Washington, but has retired from active business life. Mr Galloway is well and favorably known throughout the country as an enthusiastic advocate of organization work.

c. Damp places, or where corrosive vapors are present.

—Insulation: Rubber (for protection against water), rubber or weatherproof (for protection against corrosive vapors). Special requirements may be imposed where rapid deterioration is anticipated.

—Supports: Knobs or double-backed cleats, spaced as follows:

Voltage	Dist. from surface	Distance bet. wires
0-300	1 inches	2½ inches
301-600	1 inch	4 inches

2. Wooden Raceway

a. Location: Exposed, in dry places.

—Not in elevator cars, elevator shafts, extra hazardous locations, garages, moving picture establishments, moving picture studios, or theatres.

b. Voltage: Not exceeding 300, constant potential.

c. Insulation: Rubber, without splice or tap except at outlets or fittings.

d. Specifications: Painted with 2 coats of waterproofing or impregnated with a moisture repellant. See Code No. 60b.

e. Wooden raceway may not be carried through a floor or partition.

3. Metal Raceway

a. Location: Exposed, in dry places.

—Not in elevator cars, elevator shafts, garages, moving picture establishments, moving picture studios, or theatres.

b. Voltage: Not exceeding 600 constant potential.

c. Insulation: Rubber, without splice or tap except at outlets or fittings.

d. The raceway must have all sections and fittings coupled together mechanically and electrically, and heads of supporting screws or bolts flush with the inner surface.

—It may be extended through dry walls or partitions if in unbroken lengths, and may be carried through floor if placed in an iron pipe sleeve extending 3 inches above the floor (5 feet, if the raceway is subject to mechanical injury).

—For specifications, see Code No. 60c-e.

e. Limitations: Not more than 4 No. 14 in one raceway.

UMI

—Not more than 1,320 watts on a circuit.

—Only one system in a raceway.

—All wires of a circuit in a raceway.

f. Grounding: Runs not exceeding 25 feet need not be grounded if insulated from all metal work and if "either isolated or guarded when within reach from grounded surfaces."

4. Armored Cable

a. Location: Exposed or concealed, in dry places; or in fireproof buildings in course of construction or in damp places if insulation is lead sheathed.

b. Voltage: Not exceeding 600, constant potential.

c. Insulation: Rubber, without splice or tap except at outlets or fittings.

d. The cable must have all sections and fittings coupled together mechanically and electrically. It may be carried through floor if placed in an iron pipe sleeve extending 3 inches above the floor.

e. Limitations: All wires of a circuit in one armor.

—No bend of less than 1½ inch radius, measured from the inner edge of the bend.

—After July 1, 1921, one wire of a twisted pair to be identified.

f. Grounding: Runs not exceeding 25 feet need not be grounded if insulated from all metal work, and if "either isolated or guarded when within reach from grounded surfaces."

5. Conduit

a. Location: Exposed or concealed.

b. Voltage: Not exceeding 600, constant potential.

c. Insulation: Rubber; or varnished cloth (in sizes of No. 6 or larger and in permanently dry places); or slow burning (by special permission, in excessively hot places); or lead sheathed rubber or varnished cloth (in damp places).

—Wire to be without splice or tap except at outlets or fittings.

d. The conduit must have all sections and fittings coupled together mechanically and electrically.

e. Limitations: All wires of a circuit in one conduit.

—Only one system in a conduit.

—No size less than ½ inch.

—No bend of less than 3½ inches radius, measured from the inner edge of the bend.

—Not more than 4 quarter-bends between outlets, not counting bends at outlets.

—Conductors of No. 6 or larger to be stranded.

—Wires must not be drawn in until all mechanical work on building has been completed.

—Double braiding for twin, twisted pair and multiple conductor cables, and for all single conductors of No. 6 or larger.

—Not more than 4 2-wire circuits or 3 3-wire circuits in a conduit (except for stage pocket and border circuits) without special permission. When special permission is granted the following tables apply:

PAST PRESIDENTS—VII

Robley S. Stearnes

On July 21, 1916, at the annual meeting in his home city, New Orleans, Louisiana, Colonel Stearnes was elected president of the National Association. Having taken an active part in the civic affairs of his home state, Colonel Stearnes gained his title in 1914 by appointment to the staff of Governor Hall of Louisiana. He is president of the Standard Electric Construction Company of New Orleans, and also president of the local Contractors' and Dealers' Exchange. Colonel Stearnes is a popular and active organization worker.

TABLE 1. TWO-WIRE AND THREE-WIRE SYSTEMS

Size of Conductor	Number of Conductors in One Conduit								
	1	2	3	4	5	6	7	8	9
	Minimum Size of Conduit in Inches								
14	½	½	½	¾	¾	1	1	1	1
12	½	½	¾	¾	¾	1	1	1	1¼
10	½	¾	¾	1	1	1	1¼	1¼	1¼
8	½	¾	1	1	1	1¼	1¼	1¼	1¼
6	½	1	1¼	1¼	1½	1½	2	2	2
5	¾	1¼	1¼	1¼	1½	2	2	2	2
4	¾	1¼	1¼	1½	2	2	2	2	2½
3	¾	1¼	1¼	1½	2	2	2	2½	2½
2	¾	1¼	1½	1½	2	2	2½	2½	2½
1	¾	1½	1½	2	2	2½	2½	3	3
0	1	1½	2	2	2½	2½	3	3	3
00	1	2	2	2½	2½	3	3	3	3½
000	1	2	2	2½	3	3	3	3½	3½
0000	1¼	2	2½	2½	3	3	3½	3½	4
200000	1¼	2	2½	3	3	3	3½	3½	4
225000	1¼	2½	2½	3	3	3½	3½	4	4
250000	1¼	2½	2½	3	3	3½	3½	4	4½
300000	1¼	2½	3	3	3½	3½	4	4½	4½
350000	1¼	2½	3	3½	3½	4	4½	4½	5
400000	1¼	3	3	3½	4	4	4½	5	5
450000	1½	3	3	3½	4	4½	4½	5	6
500000	1½	3	3	3½	4	4½	5	5	6
550000	1½	3	3½	4	4½	5	5	6	6
600000	2	3	3½	4	4½	5	6	6	6
650000	2	3½	3½	4	4½	5	6	6	6
700000	2	3½	3½	4½	5	5	6	6	
750000	2	3½	3½	4½	5	6	6	6	
800000	2	3½	4	4½	5	6	6	6	
850000	2	3½	4	4½	5	6	6		
900000	2	3½	4	4½	5	6	6		
950000	2	4	4	5	6	6	6		
1000000	2	4	4	5	6	6			
1100000	2½	4	4½	6	6				
1200000	2½	4½	4½	6	6				
1250000	2½	4½	4½	6	6				
1300000	2½	4½	5	6	6				
1400000	2½	4½	5	6					
1500000	2½	4½	5	6					
1600000	2½	5	5	6					
1700000	3	5	5	6					
1750000	3	5	5	6					
1800000	3	5	6	6					
1900000	3	5	6						
2000000	3	5	6						

"For sizes not greater than No. 10 B. & S. gage, one more conductor than permitted by the opposite table may be installed in the specified conduit provided the conduit is not longer than 30 feet, and has not more than the equivalent of two quarter bends from outlet to outlet, the bends at the outlets not being counted."

TABLE 2. THREE CONDUCTOR CONVERTIBLE SYSTEM

Size of Conductors B. & S. Gage				Size Conduit, in Elect'l Trade Size
two	14	and one	10	¾
"	12	"	8	¾
"	10	"	6	1
"	8	"	4	1
"	6	"	2	1¼
"	5	"	1	1¼
"	4	"	0	1½
"	3	"	00	1½
"	2	"	000	1½
"	1	"	0000	2
"	0	"	250000	2
"	00	"	350000	2½
"	000	"	400000	2½
"	0000	"	550000	3
"	250000	"	600000	3
"	300000	"	800000	3
"	400000	"	1000000	3½
"	500000	"	1250000	4
"	600000	"	1500000	4
"	700000	"	1750000	4½
"	800000	"	2000000	4½

TABLE 3. STAGE POCKET AND BORDER CIRCUITS.

Size of Conductor	Maximum Number of Conductors in Conduit.					
B. & S. gage	Ins. 1	Ins. 1¼	Ins. 1½	Ins. 2	Ins. 2½	Ins. 3
14	11	19	26	43	61	95
12		15	21	34	50	77
10		12	16	27	38	60
8			13	22	31	49
6					14	22

For groups or combinations not included in the above tables, consult the Inspection Department having jurisdiction. For such groups or combinations, it is recommended that the conduit be of such size, that the sum of the areas of the several conductors will not be more than 40 percent of the area of the conduit.

—After July 1, 1921, one wire of twin rubber covered wires of

No. 12 and No. 14 must be identified.

—Risers must be supported at the following intervals:

No. 14 -00	No. 0 - 0000	Every 100 ft Every 80 ft
Above 0000	-350,000 c. m.	Every 60 ft
Above 350,000 c. m.	-500,000 c. m.	Every 50 ft
Above 500,000 c. m.	-750,000 c. m.	Every 40 ft
Above 750,000 c. m.		Every 35 ft

—Some approved methods of support are insulating wedges in conduit ends, clamps or wedges in junction boxes, two 90 degrees bends forming an offset in junction box.

—Conductors of No. 2 or larger "must not be deflected where they enter or leave the cabinet except that conductors of No. 2 B. & S gage to 250000 c. m. inclusive if brought into the cabinet, cutout box, junction or pull box opposite to the panel lugs in which they terminate may be deflected sufficiently to permit their attachment to these lugs provided the gutter of the cabinet is not less than 4 inches in width."

f. Grounding: Runs not exceeding 25 feet need not be grounded if insulated from all metal work, and if "either isolated or guarded when within reach from grounded surfaces."

6. Knob and Tube Work

a. Location: In dry partitions and floors.

—Not in elevator cars, elevator shafts, extra hazardous locations, garages, moving picture establishments, moving picture studios, or theatres.

b. Voltage: Not exceeding 300, if wires are fished.

—Not exceeding 600, otherwise.

c. Insulation: Rubber.

d. Supports: As for open work in damp places, except that wires of opposite polarity must be kept 5 inches apart; or the wires may be run through beams, the holes being bushed with porcelain tubes which, if set vertically, must extend 4 inches above the beam. Where the 5 inch separation cannot be maintained, each wire must be separately encased in a continuous length of flexible tubing.

e. Where this method of wiring is extended in concealed armored cable or conduit, the terminal fitting of the latter may be concealed if it provides a separate, bushed hole for each wire and contains no splices.

7. In Central Stations

a. Tile or other fireproof duct may be used in place of conduit; or open work may be employed.

b. "Except for low potential systems the insulation of the several conductors where leaving the metal sheath of cables must be thoroughly protected from moisture and mechanical injury by means of a pot head or some equivalent device."

LXXIV. WOODEN RACEWAYS

See Wiring Methods.

For Use in New York City

So many inquiries have been received as to the suitability of "The Code at a Glance" for use in New York City that ELECTRICAL CONTRACTOR-DEALER has caused Mr. Wynkoop's tabulation to be compared with Chapter 9 of the Code of Ordinances, and is glad to announce that the essential differences are few in number. We list them herewith, and suggest that this flyer be pasted in each copy of "The Code at a Glance" intended for local use. We are informed that it is the general inspection practice, where the ordinance is silent on any subject, to insist upon conformity with the National Electrical Code.

PAST CHAIRMAN—VIII

W. Creighton Peet

The first National Chairman of the reorganized association, W. Creighton Peet, was elected at the Executive Committee meeting held in St. Louis, Mo., January 23, 1918. Mr. Peet is senior partner in the firm of Peet & Powers, electrical contractors and engineers, New York City. For many years he has served on committees of the National Association and continues to devote much of his time and effort to the betterment work of the organization.

Special Requirements or Limitations in The City of New York

ARC LAMPS

The constant current type is not permitted.

CARS

CAR HOUSES

Not included in ordinance.

CONDUCTORS

No. 6 is smallest ground conductor for system; No. 10 is smallest ground conductor for equipment. A ground conductor for a 3-phase system must equal any one of the line conductors; No. 6 is smallest conductor allowed for moving picture machine outlet.

CUTOUTS

Fused rosettes not permitted; three-wire branch circuits not prohibited.

EXTRA HIGH POTENTIAL SYSTEMS

Those operating at more than 3500 volts.

FIXTURES

Dead-front receptacles required, if located less than 30 inches above floor; Receptacles in kitchen or dining room rated at 500 watts each; insulating joints are not required:

1. Where straight electric fixtures are properly connected to conduit, armored cable or metal raceway, or to grounded gas piping.
2. Where straight electric fixtures are connected to open work, and are not in contact with metal or with plaster on metal lath.
3. Where stright electric fixtures are grounded by means of a separate ground wire not smaller than No. 14.
4. By special permission, where a straight electric fixture is connected to one of the supply wires of the fixture and the supply wire is connected to a grounded circuit wire which extends, unbroken by switch or fuse, back to the ground connection.
5. Where combination fixtures are wired with conductors having an insulation not less than 3/64 inch thick, and are properly connected to grounded gas piping.

GARAGES

Conduit or armored cable must be used, even in a one-car garage.

GENERATORS AND MOTORS

All frames must be grounded, unless—where the operating voltage does not exceed 550—permission is given to insulate.

The ordinance considers only the 2-hour rating for motors.

GROUNDING

Exceptions are rarely granted for the omission of the service conduit ground.

KNOB AND TUBE WORK

Not permitted.

MOVING PICTURE EQUIPMENT

Special permission for motor-driven machines not required; No. 6 permitted for machine outlets, but local Underwriters require No. 4.

SERVICES

Multiple conductor cables required for No. 6 and smaller; No. 12 soft drawn permitted, but local Underwriters require No. 10.

SIGNS

Wood not permitted; Screw ring receptacles not approved; Open leads to sign not permitted (except for roof and ground signs).

SWITCHES

The switch controlling an auto-starter or group of autostarters need not be in sight of them.

WIRING METHODS

Fishing of wires (drawing through structure wires encased in flexible tubing) not permitted; Flexible tubing not accepted as raceway or bushing; Wooden raceway work and knob-and-tube work prohibited; Slow-burning wire allowed only under special permission. Identification of wires (for purposes of polarization) not required.

Won by the Courtesy Route

BY EDWIN L. SEABROOK

It May Not Happen Just This Way in Your Office, But the Fact That it Can Happen Ought to Make it a Big Feature in Management

When John Taylor turned the street corner and caught sight of Pank Wellings' electrical contracting shop he gave a half sigh of relief. If Mr. Welling should only happen to be in, he could sit down for a few minutes and have a pleasant chat. Then again, this was the last call on the list. It was too late to go to Oak Lynne or Haddondale. He had hopes of getting at least one good order for a hard day's work.

John was a salesman for electrical contracting supplies, not new to the business but just a little new to the outside selling end. He had been in the office some little time since graduating from high school, but after taking a course in salesmanship from the sales manager he determined to try his luck on the street. This was his third month and he had become pretty well acquainted with the trade.

This day, however, had been somewhat of a disappointment. He had followed Rule Eleven which said that it was much better to wear out your shoes soles and to run the heels over than to acquire shiny clothes by over indulgence in easy chairs. Twelve calls he had made, and he was foot sore. His order book showed some small pickups, but nothing big.

He called at some shops only to find the door locked, with a slate handy and an invitation to put the order on it. As he plodded along he wondered how some people ever managed to retain custom.

The atmosphere of some places positively chilled him. In two or three places those in charge of the office were positively grouchy. They did not know when the boss would be in, where he was, and were clam like in regard to any work on hand or in prospect.

Henry Schwank was just leaving, could not spare a minute but said he could send 'round several dozen outlets. Charles Louden seemed irritable over a complicated estimate and snapped out a request or a price on some conduit. John gave him the quotation and soon said goodby. The redheaded apprentice boy in sole charge of Hand's place seemed more indifferent and listless than usual. The next two or three places the office help gave him the stony stare. So it had gone throughout the day until John began to ask himself if all the good natured stenographers and office help had forsaken the electrical contracting business.

It was with a physically tired feeling, and one of mental apprehension that John stepped into the office of Pank Welling. Behind the desk sat a new bookkeeper and stenographer, Edith Bates, whom he had never met before. Remembering past experiences of the day it was with a trace of timidity that he presented his card and inquired if Mr. Welling was in. As Edith rose to accept the card her personality disarmed his apprehension, and the first sentence she spoke put him entirely at ease.

"No," she said, "Mr. Welling is not in. I do not think he will be in until five o'clock. I am sure, Mr. Taylor, that he will be sorry to have missed you. Not an hour ago he said it was about time for you to come in, and there were two or three matters he wanted to talk over with you."

Edith moved a pad and pencil toward him saying: "If you have anything special to suggest to Mr. Welling I am sure he would consider it and give you credit if he orders."

At this point John remembered Number Seventeen of the Sales Manager's Rules about taking a seat should the way be clear, and gratefully slipped into a chair opposite Miss Bates. Now by all the rules of romance, this story ought to end with how they looked into each other's eyes and talked of the latest movie, the best place for a dainty after movie supper and the longest way home through the park, but—

John asked whether many inquiries were coming in, and the nature of the material that would be required if these prospects were closed. It was at this point that the new stenographer showed

PRESENT CHAIRMAN—IX

James R. Strong

Mr. Strong was elected as the fourth president at the Annual Convention held in Boston, Mass., July, 1905. At the last meeting of the National Executive Committee, held in January of this year, he was prevailed upon to accept the office of National Chairman. He was born in New York City, where he still continues in business as president of the Tucker Electric Construction Company. Mr. Strong was a charter member of the New York Electrical Contractors' Association, and has always been an active and popular member of all organization movements in the electrical industry.

her keen perception of the fitness of things, a clear understanding of the business, its details and its buying requirements, and ability to draw out a lot of information without really showing her hand, or appearing over anxious.

"Yes," she said, "a lot of inquiries are coming in, but I have been too busy to charge my mind with just what was wanted in every case. I heard Mr. Welling talking over the 'phone this morning saying it would probably take several thousand feet of some kind of conduit or something like that. Do they use that kind of material in wiring buildings? I really haven't been here long enough to catch on to much of the technique of the business.

John's chin went up forty-five degrees, he looked straight at the ceiling for a full minute. Here surely was a new kind of treatment, and the keenness of the stenographer did not all together escape him. He remembered Rule Twenty seven of the Salesmanship instruction, and his hand went into his inside coat pocket and drew out a paper marked "strictly confidential and for the best customers only." He studied this a moment, drew the pad on the desk toward him, wrote a few lines, signed his name and handed it to the girl.

"Oh," she said, "I am sure Mr. Welling will be pleased to know this. I will hand it to him the moment he comes in." A few more pleasantries and John left.

Now again, by the rules of romance this story ought to end with John walking on air, and Edith taking out her pocket glass to see the kind of appearance she made. Then again she would close her eyes and imagine on one side a big electrical contracting supply house with one John Taylor as manager, and on the other a vine covered cottage on the hill by the macadam drive overlooking the park but—

When Edith saw John turn the corner she stepped over to Mr. Welling's desk and looked carefully at three price memorandums that had come over the 'phone to him not two hours before. Then she picked up the telephone book.

"Give me Chestnut 28-59 please. Is this the Everwise Manufacturing Co.? May I speak to Mr. Welling if he is there please? Thank you."

"Mr. Welling? This is Miss Bates. Yes. Mr. Taylor has just been here and left a memo saying that his firm can let you have any reasonable quantity of conduit that is just one quarter of a cent lower than either of the three quotations you had this morning. I thought this price might be useful to you right now. Yes, he signed the memo, have it in stock, can deliver at once. You may not be back before 5:30? All right. Good-by."

When the purchasing agent of the Everwise Manufacturing Co. opened some bids the next day for wiring, Pank Welling won by $56.43.

Charlie Louden put in a bid; also Henry Johnson. One had received the quotation for the conduit direct from the supply house, and the other by way of his office help, from John Taylor that day.

"Someone got a raw deal from that salesman," you say.

Suppose you turn it around and say that good nature, courtesy, amiability, and tact received their reward.

You know the old saying: "To him that hath shall be given."

IS YOUR store attractive? If it is send us a description for the benefit of the other fellow.

PRESENT SECRETARY—X

W. H. Morton

Mr. Morton was one of the forty-nine men who formed the National Association at Buffalo in July, 1901. He was elected secretary of the organization at the first convention, which position he held until 1913, when he resigned his office and removed to Porto Rico. Returning in 1919, he was prevailed upon to resume his office, which he still holds, and has since been elected general manager and treasurer of the National Association, with headquarters in New York City.

Cleveland's Home Electric

Public Flocks to See It and League Congratulated on Its Success

The Leaguer, published by the Cleveland Electrical League, says that the home electric which was opened to the public on May 15, was a huge success. In an account of the opening it says:

"Evidently the modern electrical home idea is one of the best yet devised for a real educational campaign. Still more evident is the fact that it took a gang of Clevelanders to put it over right.

"An enumerator in the hands of the front door attendant at the home which registered once each time a visitor entered, showed that exactly 3,004 people inspected the electrical residence on the opening day. It showed an approximate average of 900 for each successive day during the week up to Friday night. And on Saturday at press time, it was running a merry race to beat this record.

"Chairman Bill Marshall, of the modern home committee of the League, and his committee members, were handed a formal message of congratulation by the Members' Council body, following the opening. A special resolution passed by the council Wednesday noon highly commended this committee for its thorough job in putting over a real electrical home.

"Following the publication of the special home sections in the Leader and Plain Dealer on the opening day, the posting of 2,000 orange and black posters, 1,200 street car cards and 500 window cards, the display of newspaper advertising, the large billboard ads, the contest for the most popular high school girl in Cleveland to christen the home, and the distribution of 25,000 small cards, bearing a map showing directions to the home, together with a duplicate of the poster on the reverse side, few people in Cleveland did not know that there was such a thing as the Modern Electrical Home in Cleveland.

"It was a grand opening in the full sense of the phrase. For even a bottle of champagne was employed in christening the structure. And it was formally opened in real style by the governing officers of the Cleveland Federation of Women's Clubs, representing some 40,000 women in Greater Cleveland."

Having learned why you failed to make a sale, you ought to discover how to make the next one.

NEW YORK STATE CONTRACTORS' ASSOCIATION TWENTY YEARS AGO

Photograph taken at Buffalo preceding first annual convention of National Association, on steps of New York State Building, Buffalo Exposition. Old timers will recognize many who are still in business. As far as they have been identified, names and addresses are given in the following list. Those marked (d) are deceased. Albany: F. L. Frost, F. W. Newman; Buffalo: E. D. McCarthy, T. Naylor (d), H. I. Sackett, J. C. Stearnes (d); New York City: H. Alexander, John Dale (d), S. Davis, C. L. Eidlitz, J. P. Hall, Frank Harrington (d), J. C. Hatzel, E. S. Keifer, A. J. Martin, Phil Mongerser, J. Oberg, J. R. Strong, G. A. Swan; Rochester: M. J. Almstead, Fred'k Fish, W. H. MacDonald, R. Schmidt (d); Schenectady: J. F. Burns; Syracuse: James Hilton, C. H. Thompson; Utica: W. C. Ballds, B. V. Butts, H. G. Hatfield, M. H. Johnson, W. H. Morton, E. J. Sheehan (d); Troy: Marshall Barnes (d).

Needed: An Industrial Accounting

By LAURENCE W. DAVIS

Special Representative Sums Up Assets and Liabilities of Electrical Interests and Advises the Taking of a Trial Balance for Good of All

No other industry has ever made such tremendous growth and still not caught up with the public demand for its service as the electrical industry. Central stations, manufacturers, jobbers, and contractor-dealers have found their problem one of sufficiently rapid expansion to meet demands rather than the coördinating of efforts to efficiently give to the public the most economic service.

Like a rapidly expending business in which each Department has been striving to make "record production" regardless of balance, the electrical industry has been too largely self sufficient units, each branch extending its efforts in in many directions, often resulting in duplication of effort, wasted distribution costs, internal friction and loss of good will, both of fellow workers and of the public, which has greatly impaired economical service.

There is a lull in business—a needed breathing spell in which business may, and must, take stock of itself, readjusting its methods of operation to eliminate waste, standardize output and effect every economy possible in the cost of service it renders.

Private concerns let out the inefficient workers, "can" the misfits—or transfer them to places they can fit—replace lost motion with efficiency methods, seek to increase quality of service yet to materially decrease its cost, that business may be restored by offering the public tempting reductions from former prices. Such enforced readjustment has been the salvation of many concerns who were riding to a fall in the thrill of rapid expansion.

Should Weed Out Inefficiency

The electrical industry as a whole needs to take such an accounting. It needs to call together its various departments with a determinaion to weed out inefficiency, stop duplication of effort, effect economies in distribution, standardize its service, eliminate internal friction and through the united faith of all build up a permanent good will.

Such an accounting will show the sound fundamental condition of the industry, its assets in broad vision, strong group loyalty and united purpose upon the larger questions; but charges upon the other side of the ledger in liabilities are needed to be set up before the true balance can be struck. There are loose ends in each branch of the industry retarding economical development and the industry needs to face these squarely before it can place itself upon the efficiency basis all business must attain before we can expect normalcy.

Great emphasis has been laid upon maximum distribution of electrical goods, but too little upon satisfied absorption by the ultimate consumer. The contractor-dealers have been encouraged to develop their merchandising and have responded with new and enlarged stores of a high character which deserve the support of the industry. These retail stores reach into every community of the country, are scattered through every city and are prepared to perform their true retail function—the intelligent distribution of electrical goods to the ultimate consumer backed by continuous service, an integral part of satisfactory electrical distribution.

In the thrill of rapid expansion the manufacturer and wholesaler have not been content with distribution through the electrical retailer; dry goods stores, drug stores, hardware dealers and nearly every type of retail store has been stocked with electrical appliances and turned loose to dispose of them as they chose, without regard to the making or holding of satisfied customers.

Service After the Sale

No proper recognition has been made of the value of service rendered by the expert electrical dealer, trained to serve the needs of the consumer; nor of the service he renders after the sale in keeping the goods in continued use, a service for which, in spite of the theory that he should bill the consumer for it, can seldom be properly charged and maintain the good will of the customer. The dry goods or drug store which sells the electrical appliance as it would a bolt of cloth or a patent medicine, receives the same discount as the trained electrical contractor dealer often better if they are a part of a chain of stores.

Satisfactory studies of the relation of the cost of retailing to discounts have not been made by manufacturers and distributors, and the margin of profit is so doubtful that many electrical retailers are losing faith in the possible reward for their efforts, and the stimulus for better merchandising is breaking down.

Other retailers have found the answer to inadequate retail discounts by becoming "distributors" for the manufacturers for one or more "leaders" in appliances, securing thereby wholesale discounts to justify their retail efforts. There is growing out of this a multiplicity of "distributors," a wasteful duplication of distribution costs, an untrained placing of electrical goods regardless of absorption, and a loss of confidence and goodwill of the competing strictly electrical retailer, which is leading away from economical service to the public.

The contractor-dealer is anxious to have the proper relation of his costs to discounts defined; if he is operating with wasteful expense or unnecessary overhead, he will be the first to accept the needed reforms when they are pointed out to him. A careful defining of all the factors which the industry believes should enter into a satisfactory sale of electrical devices should be made, and discounts be based upon the cost and performance of such service. Until this is done dangerous "liabilities" are piling up on the industry's ledgers.

Educate the Public

The united efforts of all branches of the industry should be directed towards educating the public in the convenient and economical use of electrical devices in their every day life. Tremendous sums are being spent to secure maximum distribution of electrical goods, but in the minds of the average public their use entails an inconvenience which discourages their purchase. Economical distribution demands that the field for absorption of electrical devices be prepared by showing the public a new standard of electrical service in the homes.

This task can not be left to the contractor-dealer alone. He is tied by the narrow habits and conventions of architects and builders, who build as the public expects. It is up to the electrical industry as a whole to make the public expect and demand convenient opportunity to use electricity in their homes when and where they want it.

Electrical home displays, develop-

ment campaigns, model floor plans showing convenient outlets for the home, all these are essential to bring the "modern servant electrical" as a tangible familiar conception in the public mind. Large sums are being spent in sporadic local campaigns of education, and the results more than justify the efforts.

A Wasted Asset

Powerful national mediums are being overlooked. A recent issue of a magazine carried seventy-one pictured national advertisements of electrical appliances for use in the home; one of these showed the appliance connected to a convenient wall outlet, sixty-five gave no clue to whether the appliance should be attached to a lamp socket or run by dry cells or wireless, while five appliances were pictured connected to an overhead light fixture. Here is a valuable industrial asset that is worse than wasted.

Thousands of electrical appliances lie idle in homes today because their owners are tired of climbing on chairs and unscrewing lamps to provide outlets to attach the devices; and those owners will not buy other appliances with the same handicap. On the other hand every convenience outlet is an invitation to the householder to put an elecrical appliance into it and lighten the labor of the home.

Ultimate consumption of electrical devices and current demands adequate convenient outlets; economical distribution can not be attained until sales resistance is lessened in that direction. The industry can not afford to lose time nor opportunity to teach the public, in buying homes, to look for outlets for their electrical appliances, just as they look for fixtures for light, faucets for water, and radiators for heat.

Strenuous efforts should be made by both jobbers and retailers in certain localities to the end that through closer coöperation they will enirely do away with harmful competition. The line is not always clearly drawn between wholesaling and retailing, and the result too often compels the electrical contractor to carry over in stock the very materials the jobber has sold him for distribution to the consumer.

The jobbers have made headway in the past few years in correcting this ill, but serious consideration is needed today in an accounting to the industry for the heavy "liability" which exists today in friction, unrest and dissatisfaction among the contractor-dealers, their logical customers.

Rigid inspection which will enforce adherence to the highest standards of the electrical code and hold all electrical contractors responsible for their work is needed in many states. In hundreds of communities anyone may install electrical wiring regardless of their record as to their experience or fitness to do work that is even safe for the public.

This condition encourages incompetent, irresponsible "contractors" and produces a competitive situation that is opposed to every interest of the public or the industry. It prevents the public from receiving adequate installations, and stifles efforts to educate the public to an understanding of real electrical service. It shackles the hands of the contractor who would use vision in his work. It is more than a local or State problem; it affects the entire industry.

More Education Needed

Education of the contractor-dealers to greater efficiency in the operation of their business is essential. The work of the National Association of Electrical Contractors and Dealers has done much along those lines. It should receive the support of the entire industry. Every contractor-dealer should be urged to join the National Association, and being a member to use to the fullest the many services it provides. The result of the National Association's work in introducing proper accounting in the contractor-dealers' business has done much to raise the standard of his profession; it needs to be continually extended.

State and local organizations need to translate their coöperative strength into practical forms; study their local problems, not with individual prejudices affecting today's work, but with a clearer view of the conditions as they should be and a faith that they can be brought about. Economical service to the public must be the goal of the contractor-dealer; a service which gives to the public the fullest measure at the lowest cost, with an adequate reward as the foundation for a better service in the future. Such economical service can not be brought about by artificial protection; it can come only through individual efficiency. But the efficiency of the individual is largely dependent upon the experience of many; no man can afford to play the game alone; his association is the clearing house through which he may gain the experience of others, meet his fellow workers, and acquire a broader outlook on his field.

The electrical industry has before it a great task and a great opportunity. It needs to strike today a trial balance, to take an accounting of its assets and liabilities, and to charge off wastefulness, eliminate uneconomic methods and friction, and standardize the service of its departments. For the final measure of its service to the public must be economy and efficiency.

Far East Notes

Solomon Davis Sends Greetings From Far Away Japan

Oriental Office,
Electrical Contractor-Dealer
No. 42 Yamashita-cho.

Yokohama, April 21, 1921.

Farquson Johnson, Editor,
New York City.

My Dear Mr. Johnson:

"Your St. Patrick's day letter has been received with two enclosures. One a cutting from your columns and the other, the prize poem by Mrs. Burnett I knew of, for which accept my thanks.

"I think I wrote you on a previous occasion how the Electric Light Company here made a charge of 10 sen each month per socket of installation. Well, here is the way it works out, as per enclosed slip, which is a reading of my meter taken this day. The "Ready to

100% Solomon Davis in His Own Japanese Garden

42

Report of Electric Meter Indication.
電氣計器檢針報告

Mr S. Davis 殿

Date 日附 大正	20 April 1921 年
Final Reading 本回示針	466
Original Reading 前回示針	459
Indication 差引高	7
Constant メーター計算率	1
Consumption 當月分使用電量	7 K.W.H

Yokohama Denki Kabushiki Kaisha.
横濱電氣株式會社
横濱市高島町二丁目
電話本局 {503 838, 832. 833, 2554.

Jubilee

On the Back of This Japanese Electric Light Bill Are These Figures: "7 k. w. h. at 18 Sen, $1.26; Ready to Serve Charge, $1.40

Serve" charge is greater than the one for current, as noted on the reverse side.

"Also with the many advantages offered, I enclose information about 'Kyushu' coal. Also there are samples of 'English as she is spoke' on some of the signs you see around the streets, which are shown by enclosed photographs.

"The engrossing subject at the present time of the native press is the Yap question. On this I will not comment, as the sanctity of the mail here is only a secondary consideration, because it is not graceful for me to be a visitor and criticise my hosts, anyhow before my return to my own country.

"I contemplate returning to the U. S. A. and will locate probably in California next Fall, as the Summer in Japan is very pleasant.

"The financial conditions remain about the same as when I last wrote. While we in America think it is good policy to reduce our prices and market the goods purchased even at the highest prices, here they seem to prefer to hold them for a profit on war costs, the results being that the foreign trade of the country has decreased about sixty percent.

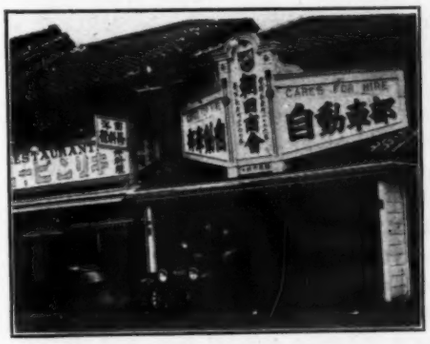
"The prices paid labor have been lowered but very little and there will be a very rude awakening some day in the near future.

"My old associate wrote me of the inquiry of Mr. Morton as to the likelihood of my attending the meeting of the New York State Association this year at Buffalo, as they are endeavoring to have all of the former presidents attend, but as much as I should enjoy sitting on the 'mourner's bench' and telling much abler men than myself how they should conduct their business, owing to the too frequent use of the word 'High,' such H. C. L., H. C. of Transportation minus Highballs, etc., I prefer to remain in my own little flower garden musing over my past, watching the lotus flowers and goldfish, in which enviable surroundings I believe most of my old acquaintances would like to participate.

"With kindly greetings to you and them, I am

"Sincerely yours,
"100% SOL. DAVIS.

Mr. Davis Translates the Sign as Follows: "Patent Bas & Boirars," Patent Baths and Boilers; "Bathe Kettle and Baison," Bath Heater and Bath; "With No Hand Troubleness," Mr. Davis Admits That He Does Not Know the Meaning



The Sign Says "Cares For Hire," So it Must Be a Flivver Garage

At a farewell luncheon given to Mr. Davis by his old associates in New York City, his old friend Charles L. Eidlitz

GREAT BARGEN

KYUSHU COAL.

SATISFACTION

That which satisfie you get it in **KYUSHU COAL** because of its exceptionally high quality and economical in use the Coal is not comparatively fine colour. become it is not refining by the machine but it is not different in quality and little smoke

The KYUSHU COAL is comparatively big lump Coal. It is not small than 1" in size, under 1" in size are sole up for work manshop.

Our firm have been contracted large quantity above Coal for Kyushu Coal mine therefore we can supply moderate price than any other Coal dealer in thise city we earnisty solisit a trial orders.

PRICE

Kyushu Coal	@ ton Settlement	Yen 33.00
" "	@ ton Ruff	Yen 34.00

K. FUJIYA & Co.
No. 62, Sanchome, Ishikawa-machi, Kanaka
YOKOHAMA.
Telp. Honkyoku 1278.

From a 9 x 12 Circular Showing How Coal is Offered at a "Bargain" in Japan

This is the Famous Beer Hole, Which Means Beer Hall, as Mr. Davis Explained in a Previous Letter. It Sure Looks Good to the Thirsty in a Dry Land

gave Mr. Davis the 100% prefix, which he is proud to use as a title.

The accompanying illustrations are reproduced from the enclosures referred to in the foregoing letter. They are unusually interesting to our own readers, since the Japanese question seems to be one of the leading topics of the day. The friends of Mr. Davis will be pleased to note that he intends to return to this country in the near future.

The Code and its Enforcement

By H. S. Wynkoop

Talk Given Before Connecticut Association of Electrical Contractors and Dealers, at New Haven, on June 1

The long and honorable history of the National Electrical Code commands respect, and its quite general enforcement throughout the country renders it notable among the technical codes. The procedure under which it has been developed and may be amended has been modified in recent years, and with a result generally believed to be advantageous, although the change has received some criticism from those who do not appreciate the underlying reasons.

The Code is primarily a *contractor's* code. While it contains design specifications which point the way to the manufacture of materials, fittings, devices and appliances which will receive approval by inspection authorities, it prescribes in great detail how these devices must be assembled and installed. This assembling and installing is *your* work; and so the Code is *your* code.

The Electrical Committee, which is a creature of the National Fire Protection Association, consists of some thirty members distributed geographically and industrially, so that all parts of the country, all branches of the industry, and all classes of inspection service are recognized. Your association is represented at present by A. Penn Denton, of Kansas City.

Biennially, in the Spring, the Electrical Committee meets formally to consider proposed amendments to the Code. A bulletin has been distributed in advance, and this contains the reports of sub-committees which have been working industriously for months in preparing their reports. In the "open meeting" the Electrical Committee listens to discussions on these reports and thereafter, in a "closed meeting," forms its decisions, which are subsequently confirmed by the National Fire Protection Association.

It is obvious that any effort to secure a desired amendment to the Code must be undertaken long in advance of the meeting of the Electrical Committee. If you desire a change, see that a sub-committee is appointed to investigate the subject, have a representative placed on the sub-committee, discuss the sub-committee's report informally with each member of the Electrical Committee. This means team work. You can not leave it all to Mr. Denton.

The secret of the success of the Code lies in the wonderful unanimity with which its requirements are accepted by inspection departments, manufacturers and contractors. For this reason, amendments should not lightly be undertaken. It is much better to rest content with a set of rules to which everyone subscribes than to attempt to devise a new set which may seem superior in some details but has not met with general approval. Spread this idea among those of your associates who are prone to criticise the Code on the least provocation. This means team work, too.

Watch Legislation

Watching legislation is another of your very important duties. Through your local members you should learn at once of any proposal to enact a local electrical ordinance. The smaller the town, the more likelihood that the local electrical official will try to have a code of his own adopted. He hopes to improve upon the Code. You should set your influence against this, and should urge the adoption of the National Electrical Code as printed, even to the numbering and lettering of the subdivisions. It is annoying and expensive for a contractor to be obliged to operate under different sets of rules or rulings in each town to which his business takes him. The form which a local ordinance may take lies more completely in your own hands than perhaps you imagine—provided you pull together.

Local laws or local conditions may require some slight departures from the Code. This cannot be helped, and should cause no particular regret. In the City of New York I am able, by the aid of a very few marginal notes, to use the Code in my daily work as readily as I can use the ordinance itself.

The existence of an ordinance implies rules, inspections, penalties. Local laws or the local attitude toward the Code will determine whether the Code is to be adopted by title or word for word, or whether the inspecting authority is to be allowed to promulgate his own rules. By displaying a spirit of helpfulness toward the local authorities, your association can accomplish much toward uniformity of rules and rulings. Endeavor to have a short jail sentence included in the ordinance, as an alternative to a fine. I have found that some of our most wilful offenders escape punishment because they have literally no property on which to levy, thus rendering a fine uncollectible.

Since prevention is better than cure, I advocate the licensing of master electricians. This gives the inspection authority a desirable means of control. When a license law is under preparation, insist that the body which determines the fitness of applicants include a representative of the contractors, of the wiremen and of the local lighting company, at least. Suspicion and misunderstanding are avoided, if all interests are "sitting in" at the deliberateness of the licensing body.

Don't make the mistake of advocating too high a license fee. Rather, arrange for a relatively small fee and a heavy bond. A high fee creates the impression that the small contractor is to be frozen out by his more opulent and influential competitors.

No contractor should object to the imposition of reasonable fees for inspection; but these fees should bring in just enough revenue to cover the cost of inspection and control. Government should not expect to make a *profit* out of the electrical industry. Do missionary work along these lines. Be constantly on the alert to note any effort to make the industry, as an industry, a source of *profitable* revenue, either through licensing or inspections or approvals.

Work Together

I trust that you realize how small a contribution you can make toward the working out of these matters, if each of you tries to help independently and in his own way; and what a powerful influence for good each of you can exert if you take counsel with each other and then make team plays. The star, the leader, often gets the applause only because of the team behind him, which puts him forward just at the right time. I am told that in the trenches "over there" every important advance was worked out in extreme detail days in advance and was set down on page after page of typewriting—only the day and

zero hour being left blank. Plan your campaigns and work together!

The Code is not perfect. No one has ever claimed that for it. Year by year it has been amended to meet the development of the industry. In three particulars, it seems to me to show a slight tendency to discourage the use of electricity or to entail an unnecessary expense.

In the first place, it recognizes a 250 watt socket. Since portable appliances are now approved with cords and attachment plugs, and are sold under the slogan "Can be attached to any lamp socket," I think we should insist upon the 660 watt socket, to the exclusion of the 250 watt size. The impression created in the minds of the householder when the inspector orders the discontinuance of a socketfed iron or grill bodes no good to the industry.

Then, again, we have the 660 watt rule which has today only an academic standing and serves no purpose other than to cause friction between contractor, inspector and customer—and friction means expense. The placing of sockets on a circuit does not determine an overload, nor does the sum total of the appliances which *may* be used simultaneously determine an overload. It's all guess work; and no matter how *you* guess, or how the customer guesses, the inspector makes the winning guess because his is official. Seek the answer in the fuse. You can't find it anywhere else! This situation points toward completed outlets and portable fixtures.

I am coming more and more to a realization that the present arrangement of the Code is a stumbling block to the average wireman. We who are so accustomed to it have little patience with the violations which the ordinary wireman commits. His mistakes cost the contractor money. Perhaps this can not be helped. Perhaps a simpler arrangement can be evolved. At any rate, serious consideration is being given to the subject by those who frame the Code.

The electrical inspection service, which I have taken as my life work, exists primarily to criticise. That is its commercial function. It should have ideals as well. But if it is to develop a genius for leadership, an unselfish spirit of coöperation and a due regard for those things which advance or retard the industry, it must deserve and obtain the support of electrical contractor-dealers, who, with it, are most deeply concerned with the enforcement of the National Electrical Code.

On to Buffalo

Anniversary Convention of National Association Takes Place July 18 to 23

The slogan of the National Association of the Electrical Contractors and Dealers is "On to Buffalo." Just take any train going in that direction and say to the conductor: "Put me off at Buffalo." But this should be done on or before July 18, for on that day the National Executive Committee will hold its first session at the Lafayette Hotel,

Miss Irwin in Her Studio

and during the rest of the week there will be something doing all the time.

The tentative program of the Anniversary Convention was published in these columns last month. There have been no changes worth noting, but several added attractions were being considered by the committee in charge, and now the entire program is complete. It has been handed over to the printer and copies of it will be distributed at the registration bureau which is to be established in room 121 of the Lafayette Hotel.

After the opening address of E. D. McCarthy, chairman of the Buffalo committee, the welcoming address by the mayor, and the response by National Chairman Strong, the old timers will be reviewed by the first president of the organization, Charles L. Eidlitz of New York City. Then Col. Stearnes of New Orleans will present the past chairman's emblem to W. Creighton Peet of New York City, and Mr. Peet will respond.

There will be addresses on the business outlook, cost finding, and conducting an electrical business, and Wm. L. Goodwin himself will tell how to capitalize opportunities.

Electric lighting in all of its varied phases will be covered at one of the morning sessions. O. H. Caldwell of New York City will talk on the home electric idea. Dr. Luckiesh of the Nela Research bureau will explain how to wire for home lighting, and Miss Beatrice Irwin of New York, one of the added attractions, will speak on color effects in lighting, a subject on which she has become a leading authority.

Miss Irwin has made a scientific study of all forms of color and is now applying the results of her knowledge to electric lighting. She is an Associate in Arts of Oxford University in England; a member of the Illuminating Engineers' Society; and the author of several books, one of which is entitled "The New Science of Color."

During the Fixture Market at Buffalo last February, Miss Irwin exhibited her newly invented system of filter lighting, which met with the highest praise from those who visited her exhibition booth at the Market. Since that time she has been called upon to install her lighting system in a number of private homes as well as other private and public buildings.

Those who attend the Buffalo Anniversary Convention should not fail to attend this home lighting session, as many points will be covered that are new to the electrical contractor-dealer.

It will not be necessary to urge those who attended the industrial lighting exhibition at Baltimore last October to be present at the home lighting session at Buffalo, for as will be remembered, this was one of the high spots of the entire meeting. The Buffalo lighting session is just as important, because it is devoted to the proper lighting of the home.

Charles L. Estey, who will address the Thursday session on the subject of "What Trade Organiaztions Can Do and What Some Are Doing," is well qualified to give a great deal of important information on the subject which he has consented to handle.

For two years Mr. Estey has been connected with the United Typothetae of America and has had charge of the publicity work of that organization as well as the educational work which was done under its three year plan.

He is also a member of the Rotary Club, the Chicago Association

of Commerce, the Hamilton Club, Direct Advertising Association, and a number of other live and progressive organizations, in addition to acting as advertising counsel for the National Association of Stationers and Manufacturers, in which capacity he has charge of its campaign for new members.

Charles L. Estey

Another prominent speaker at one of the regular sessions is Alfred E. Martin of South Bend, Indiana, who will speak on "Financing the Contractor-Dealer."

Mr. Martin is a practicing attorney of South Bend, Indiana; aged forty-nine years, a graduate of Earlham College, Indiana. He studied law in the office of U. S. Senator James E. Watson of Rushville, Indiana, and for the past eleven years has been following his chosen profession at South Bend, having been for the past two years the attorney of the Citizens' National Bank and the Citizens' Trust and Savings Bank, two strong financial institutions of the hoosier state.

Alfred E. Martin

Mr. Martin spoke before the State Bankers" Association in May, 1920, at La Porte, Indiana, on "Deflation of Credit." He has also spoken before the State Association of Electrical Contractors and Dealers at South Bend, in December, 1920, and the Optimist Club at Indianapolis.

Mr. Martin is a student of political and financial questions and has spoken extensively on these subjects throughout Indiana.

Economical retail distribution is a subject that all contractor-dealers are interested in, and C. H. Rohrback, secretary of the New York Sales Managers' Club, will talk on this topic at the Thursday afternoon session. Mr. Rohrbach is also business secretary of the American Society of Sales Executives, has written and made public addresses on trade association subjects, and is well qualified to interest his audiences.

Arrangements are not completed as we go to press for the big drawing cards to speak at the annual dinner; but there are assurances from the committee that these added attractions will not be disappointing in any respect.

C. H. Rohrback

"On to Buffalo!" is the cry; so let's go!

Reduced Fares to Buffalo

Railroads Are Alive to the Importance of Big Anniversary Convention

National Headquarters recently sent out the announcement that the passenger associations had granted a reduced rate of one and a half fare to the Anniversary Convention of the National Association of Electrical Contractors and Dealers to be held in Buffalo, New York, July 18 to 23.

This applies to practically all points in the country except the two extremes—the Pacific coast and the New England states; but those going from the latter sections can pay one way fares to the boundaries of that territory and take advantage of the reduced rates at their nearest points. From Pacific coast points and far Western territory, Summer excursion fares now prevail, and these amount to about the same as the reduction granted.

The following directions are submitted for the guidance of those who take advantage of the reduce fares:

1. Tickets at the regular one-way adult tariff fares for the going journey may be obtained on any of the following dates (but not on any other date), July 16 to 22. Be sure that when purchasing your going ticket you request a *Certificate.* Do not make the mistake of asking for a receipt.

2. Present yourself at the railroad station for ticket and certificate at least 30 minutes before departure of train on which you will begin your journey.

3. Certificates are not kept at all stations. If you inquire at your home station, you can ascertain whether certificates and through tickets can be obtained to place of meeting. If not obtainable at your home station, the agent will inform you at what station they can be obtained. You can in such case purchase a local ticket to the station which has certificates in stock, where you can purchase a through ticket and at the same time ask for and obtain a certificate to the place of meeting.

4. Immediately on your arrival at the meeting present your certificate to the endorsing officer, W. H. Morton, Secretary, at Registration Bureau, Room 121 Lafayette Hotel, Buffalo, N. Y., as the reduced fare for the return journey will not apply unless you are properly identified as provided for by the certificate.

5. It has been arranged that the Special Agent of the carriers will be in attendance on July 22 from 8:30 a. m. to 5:30 p. m., to validate certificates. If you arrive at the meeting and leave for home again prior to the Special Agent's arrival or if you arrive at the meeting later than July 22, after the Special Agent has left, you can not have your certificate validated and consequently you will not obtain the benefit of the reduction on the home journey. No refund of fare will be made on account of failure to either obtain a proper certificate nor on account of failure to have the certificate validated.

6. So as to prevent disappointment, it must be understood that the reduction on the return journey is not guaranteed, but is contingent on an attendance of not less than 350 members of the organization at the meeting and dependent members of their families holding

regularly issued certificates obtained from ticket agents at starting points, showing payment of regular one-way adult tariff fares of not less than 67 cents on going journey.

7. If the necessary minimum of 350 certificates are presented to the Special Agent, and your certificate is duly validated, you will be entitled up to and including July 27, 1921, to a return ticket via the same route over which you made the going journey at one-half of the regular one-way adult tariff fare from the place of meeting to the point at which your certificate was issued.

8. Return ticket issued at the reduced fare will not be good on any limited train on which such reduced fare transportation is not honored.

Cincinnati Own-a-Home Show

By W. B. STODDARD

Local Firms Make Exhibits and Offer Attractions to Buyers

Under the auspices of dealers in electric and gas fixtures and appliances, building materials, house furnishers and building associations, there was launched at Music Hall, Cincinnati, O., during the week of May 21-28, a very successful and comprehensive showing of everything that goes toward building, equipping and furnishing a modern home. The decorative scheme was very simple—ivory white with panels of light green, and garlands of ivy, very cool and tasty for summer. To attract the younger people there was dancing on the balcony, the large band furnishing music for the dancers and entertainment for the crowds of visitors at the Own-a-Home Show.

The Gas and Electric Appliance Co. had the largest and most comprehensive exhibit, five booths being required to show their line. The first showed both gas and electric ranges and demonstrations of cooking on each were given. The second booth showed gas and electric heaters of various styles. The third booth was given over to a full display of kitchen and laundry appliances, including washing machine, ironer, dryer, irons and dish washer. A card suggested "Wash Days are Play Days with these Electric Appliances." The next booth was devoted to lights and lighting fixtures, with the slogan "Build your home around good light." The last booth was called The Electric Shop and here was shown and demonstrated all the smaller electric conveniences—percolator, toaster, grill, hot water heater, curling irons, vibrators, flash lights, sewing machine motors, etc.

The Huber Builders Materials Co. showed a beautiful drawing room with hardwood floor, French windows, and artistic lighting fixtures. Their slogan was "Home, sweet home, is what you make it," and they emphasized the value of good and appropriate lighting for every room of the house and garage. They featured especially the mazda lamps, having a series of blotters which they gave to the younger visitors, each setting forth some good point of mazda lighting. They also won the favor of the housewife by giving to each a metal pot scraper, on which was stamped their name and address.

The Butterfly Electric Shop was a busy place, as in addition to demonstrating their washing and ironing machine, vacuum cleaners and electric ranges, they also gave an exhibition of electric table cooking, and showed how many things could be prepared in a few minutes, without dirt or worry or hurry.

The Stroud-Michael Co. had an interested throng watching the operation of their electric dishwasher, and also operated a washing machine and several of the smaller appliances.

The Wilcox & Gibbs Sewing Machine Co. had a half dozen operators sewing at full speed, using the electric motor—and showing the great saving in time and strength over the old foot power machines.

The Enterprise Co., gas and electric features, had a very catchy way of advertising. They handed out aluminum silver dollars, each being good for one dollar in trade when applied on a purchase of $25 or more.

H. & S. Pogue, Lowry & Gobel, and Alms & Doepke, each demonstrated the electric washing machine in their regular exhibit of housefurnishings.

The Hamilton League of Building Associations decorated their booth with catchy signs regarding the ownership of a home. Among the most potent were "Home owners are never Bolshevists—Own your own home," and "No rent collector for the man who owns his own home."

The Progressive Realty and Building Co., not only showed photos of many different style homes, but distributed leaflets on which were photos and ground plans of many different types of residences. A quartet that was stationed at this booth sang at intervals a booster song which was the keynote of the show:

GO AND DO LIKEWISE
"Buy, buy now," said John to Mary, "Let the Loan Association carry;
We will stop this paying rent, and in a HOME put every cent."

Business Stability

By PAUL H. JAEHNIG

sponded to Request for Editorial Dur- Chairman of Publication Committee Re- ing Illness of Editor

The ability of any business to endure through storm and calm, is a test of the fundamental principles upon which it is founded. A business whose policy is founded on integrity, square dealing, and service is bound to be firmly established and to stay so, whether in boom times or business depression.

These fundamental principles properly formulated into a policy, spell success. The old adage, "Plant your fence posts well back from the edge of the bank" is perhaps a homely way of expressing stability, but is nevertheless forceful in conveying the idea.

There is a tendency in business to drift, to follow the path of least resistance, which if allowed to continue, means disaster, and this tendency must be carefully watched and guarded against to insure success.

Competition in business is keen, keeping us alert and testing our resourcefulness to obtain our share. When, however, business depression comes, with a decreased demand, competition becomes keener, and the buyer more careful. It is at such times that a stabilized business has the advantage.

The buying public is becoming more careful as to whom it buys from, having learned that goods or service with a reputation are not only preferable, but cheaper in the long run.

The mere transaction of business without real service to the public, is unstable and will not endure. Service to the public should be the keynote of business. It is like oil to machinery; it tends to make the wheels run smoothly, and leaves a feeling of satisfaction on the part of the buyer, a job well done without friction, which is one of the biggest assets of business today.

The idea of service in business cannot be emphasized too strongly, as in these days of keen competition it is the only means of assuring success to any business. This thought is well expressed in the slogan of the Rotary Club: "He profits most who serves best."

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Six Essentials to Business Success: IV

By J. E. Bullard

Value of Getting Together in Spirit of Fair Play and Justice to All in Accomplishing Results in Business

When Columbus first discovered America, very little coöperation existed among the Indians. The different tribes were not working together and aiding each other. Had they all been closely united it would have been far more difficult for white people to have secured a foothold here. In any case the Indian would have derived far more than he did from the new settlers in the way of payment for lands and trading contracts.

At first there was not a very high degree of coöperation between the different colonies. Each colony was largely sufficient unto itself. It was not, however, until all the colonies were combined in a common purpose that they were able to win independence.

The adoption of the Constitution bound the colonies together into a closely knit, coöperative body. In fact this body was so closely knit that one of the colonies, Rhode Island, refused to join it until it became apparent that there were more serious disadvantages to an independent existence. It has been this coöperation that has resulted in the United States becoming the most successful political experiment in the world.

It has been estimated that this country now contains one fifteenth of the population of the world and one-third of the wealth. It is hardly necessary to state that had the coöperation between the different states been less complete, if the different states had fought each other, had each state bent its energies to securing an advantage over another state, this remarkable development could not have taken place.

The United States is an excellent example of the value of coöperation. When the different colonies were jealously watching each other and trying to extend their boundaries, the very great progress which resulted was due to the coöperation which displaced suspicion.

Leads to Prosperity

The same principle holds true in business. In those industries where there is the greatest coöperation, the greatest exchange of ideas between individual concerns, there is the greatest progress and prosperity. Coöperation does not mean price fixing, dividing up territory or anything else that may be interpreted as restraint of trade. It means rather an exchange of ideas and fair dealing between each other. It means being friends instead of enemies.

Where little or no coöperation exists the idea is likely to become prevalent that the way to get more business is to take some away from a competitor. Where coöperation does exist, it is recognized that it is more profitable to work together to create a larger demand and make business better for everyone.

If each of the States in the Union were coöperating with the others to no greater a degree than have the Balkan States in the past, there is every reason to believe that conditions in this country would not be so very much better than they have been there. There is a certainty that the country would not be as peaceable, have such a good reputation abroad and be considered such a land of opportunity. It is because in no other part of the world is there such a large territory, populated with so many people coöperating with each other to so great an extent that the United States is such a good country in which to live.

Several years ago in a certain city there was the keenest kind of competition between the automobile dealers. Each dealer had contracted to sell a quota of cars that required every ounce of his energy and ability to sell. All the salesmen were working on a commission basis. It was to the advantage of every person in the business in that city to have the car purchaser buy the car he sold rather than the one that some one else sold. There was no coöperation between the dealers. It was a free for all fight without rules and sometimes without honor.

It was the practice of the dealers and the salesmen to point out the good points of their own cars and the service they rendered and the bad points of the cars and the service of all their competitors. The prospective purchaser who called at the salesrooms of three or four dealers or was called upon by the salesmen of these dealers, learned all the bad things about all the cars sold in that city. As a matter of fact it was unlikely that a prospective purchaser would not hear all these bad things, remember them and forget the good ones.

The net result of this conditions of affairs was that it was becoming harder and harder for any of the dealers to sell cars. People were too much inclined to put off the purchase of cars. Finally conditions became so bad that all the dealers got together and had a meeting. They agreed to coöperate with each other to the extent of never making any disparaging remark or pointing out fancied or real defects. In other words they agreed to boost the automobile business rather than to knock it. From that time on business became better. As a result these dealers got together more and more frequently to discuss matters for the good of the industry. They worked out methods for getting more business and for giving the customers better service. Coöperation has resulted in better service to the customers and a great deal more business and profit to the individual dealers than could have possibly resulted from the old method of open warfare and no quarter.

In Electric Industry

The electric industry has developed coöperation to a remarkable degree. It matters not what line of it a person may be engaged in, it will be found that there is some organization that is willing to coöperate with him in finding a solution of his own particular problems. Had it not been for this coöperation the present size of the industry could not have been attained in so short a time.

The greatest progress, however, requires not only coöperation between contractor-dealers but also between them and the jobbers, manufacturers and central stations. Go into a city where the central station and contractor-dealers are coöperating and there you will find all of them prosperous. Go into one where they do not coöperate and there you will not be likely to find general prosperity—contractor-dealers

are not doing the amount of business they should and the central station is having a hard time to meet expenses. Let them coöperate; let each give due consideration to the rights of the others; let them work together to build up the business and the people of that city get more for the money spent and contractor-dealers and central stations make greater profits.

Builds Good Will

Good will may be defined as the feeling of trust and confidence that people have in a concern, industry or whatever else may be the possessor of good will. Trust and confidence can only be created through coöperation. Suppose that there is a decided lack of coöperation between the employes of a dealer. For example, a salesman makes certain promises to a customer which must be fulfilled by some other employe. This other employe ignores the promises and does the work his own way. The customer is not going to have as much trust and confidence in that concern as it would have if there had been coöperation between these two employes.

Suppose the concern is a corporation and that there is a lack of coöperation between the officers and the directors. The general manager or the president may go out to secure a contract. He finds it necessary to make certain important decisions at once in order to get the other parties to agree to the contract. These are made and he brings it back for the signature of the other officers. These men, however because they do not feel that they have been given sufficient prominence in the drawing of the contract, refuse to sign it until changes are made. It is easy to see that this concern would not be able to create a great amount of good will for itself.

Petty jealousies between the different members or the employes of the same firm never fail to work harm. It is also easy to see how ridiculous they really are and how much more could be gained if they were eliminated. The same rule holds equally true in regard to the relation of different firms to each other.

Coöperation means working together. It means getting rid of petty jealousies. It means a broader outlook, the good of all rather than the flattering of the vanities of the few. It means the sacrificing of certain things on the part of all. Coöperation may actually mean the lack of or the restriction of freedom but it results in the good of all.

If a man was living alone on an island and had no communication or business intercourse whatsoever with any other person he would enjoy perfect freedom. However, he would be deprived of all modern conveniences. He would have no electric light service, no sewers, none of the things which require the coöperation of others. He would have to do everything for himself. The moment another person joined him, if he was to enjoy the benefits of the labor of that other person he would have to give up some of his freedom and do some coöperating.

We all give up a great deal in order to enjoy the benefits of civilization. We don't dress as fancy dictates but rather as the majority dictates. We are deprived of the right to deal with our enemies just as we may deem fit. We have to leave their punishment to the judgment of the courts. No matter in what direction we turn we find ourselves hedged about by restrictions.

No matter how great these restrictions, however, no one denies that civilization is better for all than barbarism. It is better because it means more of the comforts of life, greater protection to life and property, more rapid progress. At bottom, however, all that we call civilization is merely coöperation.

Recognize Right of Others

True coöperation always recognizes the right of others. It must do this because that is the only way in which one can work satisfactorily with others. One of the great causes of all labor trouble is the lack of coöperation, the failure on one side or the other to recognize the rights of the other side. The wage earner may be at fault or the employer may be at fault. It makes little difference in the final result which side is in the wrong, for if there is lack of coöperation trouble is bound to follow sooner or later.

The open shop or the closed shop never solves the problems of labor and capital as long as there is a lack of coöperation. Profit sharing systems, bonus systems, welfare work, and any of the various other schemes employed to create a better feeling between labor and capital may work admirably in one place. If they are a success, it is usually due more to the spirit of coöperation that exists in that place than to anything else. Try out the same scheme in another place where there is a lack of coöperation and the result is a failure. No man or any group of men can hope to get the most out of other men or other groups unless due regard is given to the rights of those other men or groups. A spirit of coöperation must exist or there will be a lack of trust and confidence that sooner or later will be sure to prove expensive.

In this country today, the development of water power is being carried on to a greater and greater extent. Vast distribution lines have been built, the power from many sites have been fed into the same system. Steam and water plants work together. This is coöperation. It makes the electric service resulting so good and so cheap that a great deal more of it may be sold. It means an increased market for contracting work and for electrical appliances.

Coöperation always has this result. The greater it is the greater the prosperity of every one concerned. Without coöperation there can be no great success because only through a greater or less degree of coöperation can one enjoy the benefits of the services of others.

Just Twenty Years Ago

The following item appeared in the first number of the NATIONAL ELECTRICAL CONTRACTOR, taken from the Electrical World and Engineer:

"The beauty of the electric lighting at the Buffalo Exhibition is due to the fact that it is all incandescent lighting (with the exception of a few flambeaux of natural gas.) These lamps are nearly all 8-cp lamps. The total number of these lamps has not yet been officially announced. It is said, however, that 4000 horse-power is transmitted to the exhibition from Niagara, and used for lighting purposes. If this is the case, and if each lamp takes, say, 30 Watts, then there will be about 100,000 lamps employed in all. It is curious to remember that each incandescent lamp filament weighs only about a milligramme, and that consequently the entire mass of the lamps collected together would only be a few ounces, making a parcel that could easily be carried in the hand."

WHO carries your Liability Insurance? The National saves you money on this.

·CONTRACTING·

A Department Devoted to the Study and Discussion of the Practical Problems of Electrical Contracting

·ALLAN COGGESHALL Associate Editors HENRY F. RICHARDSON

A. C. Motors & Controllers & Their Installations

In handling an electrical installation where several A. C. motors of varied sizes are involved, there are many interesting problems involved. In the immediately preceding issue some of the motor characteristics have been discussed as well as different varieties of control apparatus.

The selection of the types and sizes of motors to be used is usually made in advance of determining the actual wiring layout which is to carry the electrical energy to the various motors. The factors given chief consideration in the selection of the motors are rightly the load demands and characteristics of the machines which the motors are to drive.

The data available as to the performances of the driven machines is not, however, always entirely reliable nor is it necessarily the last word on the subject. If production is to be increased, if greater economy is to be sought, it is not sufficient to merely be guided by past performances of these machines and the experience of somebody else.

The tendency of the machine builder is to see to it that a motor large enough is provided, that there may be no danger of his machine laying down or failing to do the work on account of insufficient driving power. This tendency, very naturally, often results in the selection of motors of larger capacity than are really needed.

On the whole, this tendency to over-motor, probably causes less serious trouble and hardship than if the other extreme were approached and a manuacturing plant were under-motored. It should be the ambition of the electrical engineer and contractor, however, to plan the work out so that the motors chosen and the distribution scheme employed, will most nearly fulfill the real needs of the situation and furnish an arrangement yielding the greatest return for the capital invested.

It is interesting to note how often the study of the wiring system throws additional light on the proper selection of motors and provides a check on the reasonableness of the sizes and types of motors previously chosen.

Hand Operated Compensator Showing Self Contained Relays, Etc.

For example, if the motors apparently required as per the dictates of the available machine data, should result in an electrical load for a given floor in a manufacturing plant, which was out of all reason for the size of the area considered, there must have been something wrong with the data employed in making the choice of motors. This fact would not be revealed until the application of tests of the wiring layout, and the resulting wire sizes required to handle the motor load would thus indicate at once that the data used in choosing the motors should be seriously challenged.

Too often, in the handling of the electrical equipments of a factory, the problem is not considered in its entirety. Often the motors are requisitioned independently of everything else, and the purchasing agent given a list of motors to buy from the lowest bidder. Later, the wiring system is developed, and, if a generating plant is involved, it becomes another separate and independent consideration.

Sometimes of course, all of these matters are put into the hands of competent engineers who consider all factors in their proper relation to each other. This brings, out again, however, the real function that the enterprising electrical contractor can fulfill in being alive to the nature of this problem and being able to point out to the prospective clients the real economies and niceties of power insallation problems.

In planning on the best arrangement of controllers and motors one particular aspect of the work is seldom considered in the choice of types, and that is, the effect on the wiring of the starting currents and the protection of the motors during the starting periods.

The usual practice in hand and automatic starters of the compensator type for squirrel cage motors is to short circuit the protective devices during the starting period and to throw them into circuit only after the motor has assumed running conditions. This means that the wire supplying current to the motor must have its own protection which may be located at a remote point to the motor and that this protection also is the only device which protects the motor itself during starting.

Whatever size wire is used need only be protected in accordance with current ratings as listed in the code. If the wire used should have a current capacity in excess of the starting current requirements of the motor there would be no adequate automatic or fuse device consistent with the motor size and still no code requirements would be violated.

Of course this is by no means the usual case and contractors are not in

the habit of using over size wires, but it may easily occur where group feeders are employed. For such cases the tap wires from a main feeder may be made over size in order to avoid the installation of fuse gaps or cutouts.

There is a ruling in the code on the wiring of motors that may be taken advantage of here and that, is the permitting of Table C ratings on rubber covered wires where only a single A. C. motor is to be fed from the wires so rated. This often results in the elimination of a fuse gap and permits a solid top to be made with a reduction in wire size of from two to three sizes. The size of the group feeder must of course be governed by the rubber rating—table A, and right here it may be well to call attention to an error in the printing of the code, where table "B" is mentioned under 8c table "C" is intended, this is also referred to again in 23e.

In the last issue of the code—1920, ratings were given for the first time, establishing varnished cambric insulation. This introduced a third table in the wire ratings, there now being tables A, B, & C whereas there, formerly were only two tables A & B. Therefore, the table which was formerly referred to as table "B" is now table "C."

When use is made of the rule, allowing weather proof ratings on rubber covered wires, care should be taken in reducing wire sizes never to splice a solid wire to a stranded wire. That is, where the tap wire which would be O. K. from a size stand point is a solid wire and the main is stranded the tap wire should either be made stranded or a larger wire used.

The fact that protection of the motor during the starting period is not taken care of in the usual arrangement of starting equipments as put out by motor manufacturers, has resulted in other provisions often being added by the wiring contractor. These provisions may consist of fused switches being installed ahead of the compensators.

The fuses in such cases are sufficiently large to carry the starting currents, and the switches act as disconnect switches, permitting the compensator to be entirely disconnected from the line when it is necessary to work on same for repair of finger contacts or other causes. Even where the starting protection is not deemed necessary an unfused knife switch ahead of the compensator is a very good thing, to permit of the disconnecting feature referred to.

Later, developments in the design of starting apparatus have recognized the desirability of providing protection during starting periods, and on recent designs some manufacturers have provided time element devices in series with the main circuit and so calibrated that it is necessary for the excessive current to continue flowing longer than a predetermined time to actuate the tripping mechanism and open the circuit.

Such provisions can best be made where the starting controllers are automatic and are operated by remote control push button stations.

With hand operated compensators one throw of the handle short circuits the protective devices which are not in circuit until the handle has been put into the running position. There has been, however, a marked development in the design of this hand operated equipment, one of the late designs being shown in the accompanying illustration, with cover removed so as to show the self containued relays, which were formerly installed separately on a slate base usually mounted above the compensators. This new design also has conduit box in the rear for the termination of conduits carrying line connections and motor wires.

This equipment is a very nice example of a manufacturer recognizing the installation point of view in the construction of his apparatus and was brought about by contractors vigorously expressing their ideas and insisting that they should be given consideration in the manufacturing design. It is a great pity that this very equipment should have developed some serious defects in actual use. These defects, however, are not fundamental to the design but consist in trouble with the ratchet mechanism, probably due to the use of too soft or too thin metal, in the ratchet parts, and as soon as this was discovered by the Manufacturing Company steps were taken to remedy same.

Where the older type of compensator is used, and there are many still in use, a steel box may be made use of to cover up the wiring connections, and the relays may be mounted on the sides of such box in the manner of ears.

This box may be arranged with an opening in the bottom which will allow it to set down close over the wiring leads of the compensator, and the box then offers an opportunity for terminating the conduits in an orderly manner and may also be used for mounting a switch within the box if desired. The chief object of this box however is to provide a suitable means of terminating the conduits and at the same time a means of covering up the wires which in the case of a three phase compensator are nine in number and require some housing for adequate protection.

For small motors where no compensators are necessary a new switch has lately made its appearance and that is the small industrial oil switch known as the F.P. 10 in the General Electric Company's nomenclature, but also made by Condit Company, and others.

This small oil switch is designed to take the place of the small 30 ampere air break knife switch or so called safety switch. In many locations the knife type safety switch is really not a safety switch. For example in a textile plant where the atmosphere is surcharged with lint the air is almost inflamable and even though a switch is boxed in, its arching contacts can cause fire, as of course the enclosing box is not gas or vapor proof.

This small oil switch has been found to fulfill a number of very useful functions and is relatively inexpensive when composed with the larger oil switches. It may be plain overload or may be equipped with no voltage release and the overload protection may be either by means of relays or time fuses. It is arranged for conduit connections, and on the whole presents a very compact device which dovetails in to the wiring scheme in a very satisfactory manner.

In many plants where continuity of service is an important factor and rapid repairs are essential, disconnect switches have been installed ahead of these small oil switches. These disconnects are merely unfused knife switches installed in a closed box and wired in on the line side of the oil switch.

The box containing the 30 amphere knife switch is larger than the whole oil switch so that a rather awkward appearance is the result. It would seem as if some means should be found for adding the disconnect feature to the oil switch itself. This same thought also applies to the larger size compensator switches. The newer designs are self contained in all respects except the disconnect feature. Any oil switch with overload relays, no voltage release, time element devices etc., is certain to need repair and adjustment occasionally and where used on an A. C. circuit at 440 volts or higher should be disconnected from the line before a workman is allowed to work thereon.

(To be continued.)

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New Estimate Sheet Proposed

BY A. GREENBLATT

Secretary of New York Estimators' Association Makes Comparisons and Suggests Four Page Blanks to Cover All Requirements

Standardization has proven a boon in all industries. This is an established fact, so it would be superfluous to dwell much on this subject in this paper. But let us start with the fact firmly in mind and assume that a standardized estimating sheet for electrical contractors will prove beneficial to the industry at large.

The National Association of Electrical Contractors & Dealers has long ago gotten up a Universal Estimate sheet, but from the writer's knowledge of about twenty years' mixing among electrical contractors, this sheet is far from being universally used. There may be good reasons for it. Our own opinion is that it is incomplete, though it is quite a long sheet and has some meritorious features in it. We shall dwell on this point more fully further along in this paper. Others may have other reasons for not having used it, but apparently no criticisms have been sent in on it because no efforts have been made to change the form to make it universally usable.

The general tendency among electrical contractors toward the industry seems to lack constructive initiative. We rather like to have things done for us by the "other fellow" but if he does not do it we will not bother him and when we ourselves find some "better way out" we keep it to ourselves and do not mention it to the other fellow at all.

We have seen quite a number of very good estimating sheets gotten up and used by various electrical contractors. Some were elaborate; in fact, too much so, others more simple, but no two were alike. The firms who used them apparently thought that they were the only ones who needed a sheet with provisions for all the information of the job estimated and that the other contractors didn't know how to figure anyway and therefore would not know what to do with a sheet like it.

Let us consider for a moment the purpose of an estimating sheet.

A judge and jury sometimes spend weeks listening to the tales of lawyers and witnesses to get at the actual facts in the case in order to pass judgment on it. Without the actual facts in hand justice cannot be meted out.

The purpose of an estimating sheet is to record all the facts contained in sets of plans and specifications, describing electrical installations. With all the facts recorded we are able to arrive at a proper and correct estimate.

Furthermore, to reduce the human element to a minimum, the estimating sheet should be so arranged that it would act as a reminder, to the one doing the estimating, on the various items entering into the job.

There are difficulties, of course, in arranging such a sheet, because of the fact that all electrical installations do not require the same items, but these difficulties can be overcome as well as a good many others that have been overcome.

Several forms have been prepared by various contractors and the associations, which would answer the purpose except for some limitations.

FIRM NAME ESTIMATE NO.....
Address DATE.....

Building	Plan No.....Date.....Scale.....
Location	Spec. No.....Date.....Pages.....
Owner	Addenda .....
Address	.....
Architect	No. of Flrs.....
Address	Dimensions .....
Engineer	.....
Address	Floor Heights .....
Bid To	.....
Address	Flr. Construction .....
Date and Time of Bid Due.....	.....
.....	.....

OUTLINE OF SPECIFICATION

Certified Check.....	Branch Crts. Per Conduit.....
Bond	Empty Conduits .....
Insurance	Motor Switches .....
Watchman	" Starters .....
Telephone	" Installing .....
Pro-rata Charges	" Connecting .....
Cutting and Patching.....	.....
Drawings	.....
License	Meter Loops .....
Inspection	Bell System .....
Service—AC DC	Clock System .....
Location	Watchman System .....
Overhead—Underground	Phones Public .....
Ltg..... Wire..... Volts.....	Phones Inter. Com. .....
Pr..... Wire..... Volts.....	Firealarm System.....
.....	Telautograph " .....
Feeders—Ltg.	Nurses' Call " .....
Pr.	Signal " .....
Branches—Ltg.	Messenger Call " .....
Pr.	Auto Call " .....
Conduit	.....
Wire	.....
Outlet Boxes	Other Data .....
Floor Boxes.....	.....
Fixture Studs.....	.....
Switches	.....
Receptacles	.....
Special Outlets	.....
Drop Cords.....	.....
Fixtures	.....
Lamps	.....
Panels and Cab. Ltg.....	.....
Panels and Cab. Pr.....	.....
Sw. Boards	.....
Dimmers	.....
Fuses	.....
Stage Pockets	.....
" Borders	.....
" Footes	.....

First Page of 4-Page Estimate Sheet Proposed by Mr. Greenblatt. Each Page is 8½x11 Inches, the Same Size as a Regular Letterhead. The First Page is Self Explanatory Except for Size

LIGHTING SCHEDULE

	OUTLETS				SWITCHES					CONDUIT AND WIRE					
LOCATION	C. O.	S. O.	Brec.	Flr.R.	Sw. Sp.	Sw. Dp.	3-W'y Sw.	4-W'y Sw.			½"	¾"	1"	No. 14	No. 12
.....															
.....															
.....															
.....															
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.....															

Page 2 of the 4-Page Estimate Sheet. Size of Page 8½x11 Inches, With 53 Lines for Writing, Making it Large Enough for Any Purpose.
Page 3 is Same Size, Equally Divided for Feeder Schedules, and Other Systems, and Ruled With Cross Lines and Column Rules to Fill Page 8½x11 Inches

The universal estimating sheet of the National Association, for instance, has some admirable features. There is a list of reminders and columns for unit and total material and unit and total labor, and a heading for some data of the job, but assuming even that the total quantities of material listed on that sheet is correct there is no provisions on it to show how these total quantities were arrived at.

The estimating sheet, or rather bundle of sheets, gotten up by the Chicago Association and practically copied by the Minnesota Association, covered the features lacking in the universal sheet of the National Association, but the one great objection to that is that it is too bulky for general use. While all these sheets may be necessary or required for a large and complicated job, they are entirely too large for the ordinary job.

The writer, therefore, desires to submit herewith an estimating sheet which he thinks can be used universally for the large as well as the small job.

We are also submitting herewith a form by now adopted by the Canadian contractors' association which has some very admirable features in it. It is very cleverly arranged, although it has other limitations which can be readily observed by its arrangement; nevertheless it may serve as a good suggestion.

Yes, we realize that the form submitted herewith may not appeal to everybody. All well and good, let us have your criticism and possibly a suggestion to improve on it. Let us start the ball rolling and keep it so until we reach what we are aiming for.

COMPILATION

QUANT.	DESCRIPTION	Material	Labor	QUANT.	DESCRIPTION	Material	Labor
.....	1½ Conduit.....	.....	.....	Total	1st Col. Brt. Frd....	.....	.....
.....	.....	.....	.....	.....	Push Sws. & Plates	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	Recepts. & Plates..	.....	.....
.....	Bx Cable	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	Fixtures	.....	.....
.....	Wire	.....	.....	.....	Lamps	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	Bell Wire	.....	.....
.....	.....	.....	.....	.....	Bells	.....	.....
.....	.....	.....	.....	.....	Push Buttons	.....	.....
.....	.....	.....	.....	.....	Annunciators	.....	.....
.....	.....	.....	.....	.....	Batteries	.....	.....
.....	.....	.....	.....	.....	Transformer	.....	.....
.....	Outlet Boxes	.....	.....	.....	Potentiostat	.....	.....
.....	.....	.....	.....	.....	Telephones	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	Conduit Fittings ..	.....	.....	.....	Motors and Starters	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	Cutout Boxes	.....	.....	.....	Generators	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	Panels	.....	.....	.....	Loom	.....	.....
.....	.....	.....	.....	.....	Knobs	.....	.....
.....	.....	.....	.....	.....	Cleats	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	Sw. Bds.	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	Totals	.....	.....	.....
.....	Dimmers	.....	.....	.....	Material	.....	.....
.....	.....	.....	.....	.....	Labor	.....	.....
.....	Borders	.....	.....	.....	Incidentals	.....	.....
.....	.....	.....	.....	.....	Cartage	.....	.....
.....	.....	.....	.....	.....	Inspection	.....	.....
.....	Foots	.....	.....	.....	Bond	.....	.....
.....	.....	.....	.....	.....	Drafting	.....	.....
.....	Pockets	.....	.....	.....	Trans'tation & B'd.	.....	.....
.....	.....	.....	.....	.....	Supervision	.....	.....
.....	.....	.....	.....	.....	Total Cost	.....	.....
.....	Motor Sws.	.....	.....	.....	% Overh'd & Profit	.....	.....
.....	.....	.....	.....	.....	Am't of Bid	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	Est. By			
Total	.....	.....	.....	O. K'd. By			

Page 4 of 4-Page Estimate Sheet. Regular Size of This Page is Same as Other Pages, 8½x11 Inches, With Unit Ruling for Material and Labor Headings

First Electric Lights in Buffalo

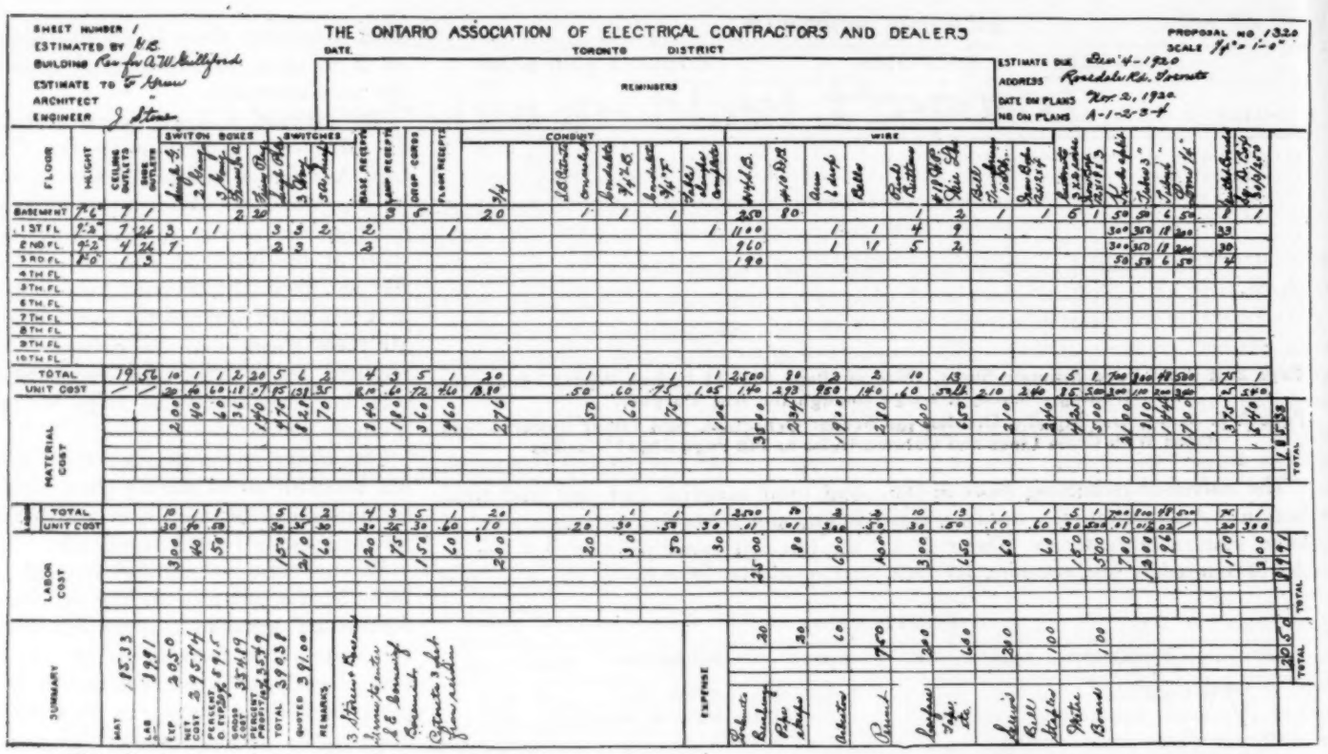
All Went Well Until a Rat Put the Lights Out and Spoiled the Exhibition

In some of the Buffalo General Electric advertising is found the following story of Buffalo's first attempt to interest her citizens in electric lighting:

Many recall Buffalo's first introduction to electricity, and in the light of modern day accomplishments, that first effort was as amusing as would have been the sudden introduction of an automobile at King Arthur's Court.

A number of pioneer civic well-wishers secured permission to introduce electric lighting into Buffalo, back in the early 80's. A string of either eight or ten arc lamps was installed on Ganson street; principal street on "The Island" across from the foot of Main street. The public was invited to go there to see light made without gas or oil.

About 90 percent of the people scoffed at the claims and laughingly refused to go that far. To interest them drastic generosity was needful and it


THE ONTARIO ASSOCIATION OF ELECTRICAL CONTRACTORS AND DEALERS

This Illustration of Canadian Estimate Sheet Mentioned in Mr. Greenblatt's Article Was Taken from the Electrical News. It is Reduced from 8½ x 11 Inches, but the reproduction is Large Enough to Show the General Layout of the Original Sheet, Which Also Has Margin for Filing at Top

was extended through newspaper announcements which apprised citizens and visitors that they were at liberty to call a hack at any time and order the driver to transport them to Ganson street. Some hundreds took advantage of the chance to take a hack ride and see the "new fangled lights."

The results were startling but not successful, for on the first day a rat short-circuited the current and put the lights out.

To follow step by step the advancement from that now almost forgotten day would serve no practical purpose. The advancement comprised the slow enlargement of the company formed to introduce the service into Buffalo and the constant changes of company management which ultimately resulted in the formation of the Buffalo General Electric Company, which through the distribution of nearly 545,000,000 kilowatt hours of electrical energy, now performs the major portion of the city's innumerable tasks and lightens the toil of her 520,000 people.

Then, suddenly Edison brought about an accomplishment which convinced scores of doubting thousands. The development and production of his small incandescent lamp brought the fact sharply home to millions that the dreams of the electrical scientists were not dreams at all; rather were they the manifestations of solid knowledge gained through study and hard work.

With the ever-increasing installation of the incandescent lights in public places came a better understanding of the flexibility and adaptibility of electric force, and in time each new application of the power came to be recognized as a matter-of-fact.

Soon thereafter the millions of men and women who came to Buffalo to view the wonders and the glories of the Pan-American Exposition rode to the gates of that superb display of man's accomplishments in cars that received their force from the distant Cataract and expressed their admiration of the superb illumination which met their eyes when they had passed the gates and entered into that arena of splendor and which was also generated by the Cataract.

Overhead

An article by C. D. Henderson in the Electrical News of Canada, lists the following items of overhead as a fair example for the contractor-dealer:

Rent (shop, store, warehouse, garage, barn, office).

Light and Heat (store, warehouse, garage, barn, office).

Salary (Owner's salary that he could command as manager of a similar business).

Telephone and Telegrams.

Car, Truck or Horse and Wagon and Bicycle Upkeep.

Bookkeeper's Salary.

Stenographer's Salary.

Stockkeeper's Salary.

Office Boy and Delivery Boy.

Percentage of Foreman's Time Spent Figuring.

Insurance—Fire, Liability and Workmen's Compensation.

Taxes — Municipal, Business and Property Tax, Provincial, Federal Income Business Profit Tax.

Bad and Doubtful Accounts.

Allowance for Lost, Stolen and Defective Materials.

Labor Lost Replacing Defective Goods.

Lost Time in Shop Repairing Tools, Etc.

Interest on Capital investment at 6% and Interest on all loans.

Allowance on Accounts.

Advertising (Newspapers, Programs, Signs, Etc.).

Commissions.

Repairs for tools.

Repairs around Store, Shop or Warehouse.

Depreciation on Office and Store Furniture.

Depreciation on Car, Tools and Machinery.
Trade Papers, Association Dues.
Stationery—Books, Printing.
Stamps, Ink, Pencils, Typewriter Ribbons.
Travelling Expense, Car Fares.
Collection Fees.
Legal Fees.
Donations.
Window Dressing Materials.
Licenses (Auto and Business).
And other items that cannot be charged directly to your customers.

Ampere Capacity Ratings of Electrical Conductors

BY HUBERT S. WYNKOOP, M. E.
In Charge of Electrical Inspection, City of New York

I have recently had occasion to make a comparative study of Tables I and II of No. 18 of the National Electrical Code. The first is headed "Allowable Carrying Capacities of Wires," while the second purports to relate to "Standardized Stranding." As a matter of fact, the second table is really one of ampere capacity ratings of commercially obtainable stranded conductors. To some extent, therefore, it must supersede the earlier and more familiar Table I.

Accordingly, I have combined the two tables, employing italic figures to indicate sizes listed in Table I, to which we have been accustomed for years.

A typical case has just come under my observation. The inspector reported the use of a No. 0 cable (125 amperes) where a No. 00 cable (150 amperes) was required. The contractor insisted that he had used a No. 00, that the cable under discussion had been purchased as No. 00, and that the tag designated it as No. 00.

We measured the strands. There were nineteen, and the contractor claimed that each was No. 12 B. & S. gage, making 124070 circular mils which corresponds most closely to a No. 00. I found the size of a strand to be No. 13 B. & S. gage, giving a total area of 98380 circular mils, which corresponds most closely with a No. 0 (125 amperes). But upon referring to Table II it was seen that the cable actually fell between sizes, although its ampere capacity rating is 125 amperes—the same as a No. 0 cable.

Having only recently made this discovery, I was curious to ascertain whether I was alone in my stupidity.

CURRENT CAPACITIES OF CONDUCTORS, SOLID AND STRANDED

No. of Strands	Mils Diam.	B. & S. Gage	Area in C. M.	Overall Diam. of Copper	Table A		Table B	Table C
					Rubber Insulation, Amperes	Varnished Cloth Insulation, Amperes		Other Insulation, Amperes
1	40.3	*18*	1624		3			5
1	50.8	*16*	2583		6			10
1	64.1	*14*	4107		15		18	20
7	25.	22	4490	.075	15		18	20
1	80.8	*12*	6530		20		25	25
7	32.	20	7150	.096	20		25	25
1	101.9	*10*	10380		25		30	30
7	40.	18	11370	.120	25		30	35
1	128.5	*8*	16510		35		40	50
7	51	16	18080	.153	35		40	50
1	162	*6*	26250		50		60	70
7	64	14	28740	.192	50		60	70
1	181.9	*5*	33100		55		65	80
1	204.3	*4*	41740		70		85	90
7	81	12	45710	.253	70		85	90
1	229.4	*3*	52630		80		95	100
7	91	11	58000	.273	80		95	100
1	257.6	2	66370		90		110	125
7	102	10	72680	.306	90		110	130
19	64	14	78030	.320	100		120	150
1	289.3	*1*	83690		100		120	150
19	72	13	98380	.360	125		150	175
1	325	*0*	105500		125		150	200
19	81	12	124900	.405	150		180	210
1	364.8	*00*	133100		150		180	225
19	91	11	157300	.455	175		210	250
1	409.6	*000*	167800		175		210	275
			200000		200		240	300
1	460	*0000*	211600		225		270	325
19	107	*	217500	.540	225		270	325
19	114	9	248700	.570	250		300	350
			250000		250		300	350
			300000		275		330	400
37	91	11	306400	.637	275		330	400
37	97	*	347500	.679	300		360	450
			350000		300		360	450
37	102	10	381200	.714	325		390	500
			400000		325		390	500
37	116	*	484300	.798	400		480	600
			500000		400		480	600
			600000		450		540	680
61	102	10	633300	.918	475		565	700
61	107	*	698000	.963	500		600	750
			700000		500		600	760
61	114	9	788500	1.030	550		660	825
			800000		550		660	840
61	121	*	893100	1.090	600		720	900
			900000		600		720	920
			1000000		650		780	1000
61	128	8	1007000	1.150	650		780	1000
			1100000		690		830	1080
91	114	9	1191000	1.250	725		870	1125
			1200000		730		880	1150
			1300000		770		920	1220
			1400000		810		970	1290
			1500000		850		1020	1360
91	128	8	1502000	1.410	850		1020	1350
			1600000		890		1070	1430
127	114	9	1660000	1.480	900		1100	1460
			1700000		930		1120	1490
			1800000		970		1160	1550
			1900000		1010		1210	1610
			2000000		1050		1260	1670
127	128	8	2097000	1.660	1100		1300	1700

I find I am not. Most of us seem to be going right on in the accustomed way: Obtaining the total circular mils of the stranded conductors and then referring this value to the nearest listing in Table I.

In law, the later enactment supersedes a prior one to which it runs contrary. So here we must use Table II in determining ampere capacities. The question then arises at once: Of what use is the lower part of Table I, since it deals with sizes which do not exist (unless perhaps in solid conductors, which are seldom used)?

But if we abandon the lower part of Table I, because we are using Table II, how shall we designate these new sizes? We cannot give them gage numbers and speak accurately; and to name each cable as "x strands of No. y" seems rather clumsy.

Might it not be well to establish the convention that all solid conductors be described by gage number, and all stranded conductors by circular mils? The cables would then be tagged in circular mils (as is now done for the very large sizes), and one class of disputes between inspector and contractor would disappear.

Plea for Outlets

City Electrician of Omaha Condemns Present Neglect

Omaha, Nebr., May 16, 1921.

Editor
ELECTRICAL CONTRACTOR-DEALER
New York City

Dear Sir:

The writer recently examined plans issued by the Architects' Small House Bureau, Minneapolis. These were quite complete except for one important item.

On one set of plans no convenience outlets were indicated in kitchen, dining room, sun porch, bath room, and two bed rooms.

Today nearly every new house constructed is wired for electricity. Practically all of these homes will be prospective customers for many electrical appliances. At our home we use the convenience outlet in the dining room some four hundred times yearly, every morning for the toaster, many Sunday evenings for toaster or chafing dish.

We would consider it an outrage to be compelled to climb on the dining table in order to connect the appliance to the chandelier that number of times yearly. Would this not be a good subject to refer to the Society of Electrical Development and other various electrical leagues, campaigns, etc., for action? Yours very respectfully,

—Israel Lovett, City Electrician.

Trumbull Cheer, that wise and pithy little company magazine published at Plainville, Connecticut, credits the following verse to Charles Wiggins, manager of the electrical department of the Dunham, Carrigan & Hayden Company, San Francisco, and it's a pleasing example of truth and poetry:

Rhyme and Reason

When the workmen own the workshops;
And the railroad men the rails;
And the grocery clerks the groceries;
And the mail clerks own the mails—
When the preachers own the pulpits;
And the pressmen own the shops;
And the drillers own the oil wells;
And the jails are owned by cops—
When conductors own the street cars
And each driver owns his bus;
Will you tell us common people
Whatinell becomes of us?

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·RETAILING·

A Department Devoted to Practical Suggestions that Help to Solve the Problems of Electrical Dealers

Tying Up With a Show

By Wm. Bliss

Some Plans of Live Louisville Electric Dealers

The first annual Grocers' Exposition, held in the big Armory in Louisville, Ky., last winter, was devoted to a showing and demonstration of all good things to eat and drink that are sold in a modern grocery. Not only that, but it was also demonstrated what a large part electricity plays in lighting, heating and cooking in the modern home. The roof was hung with red, white and blue bunting, and large clusters of electric lights added to the beauty of the scene.

The Electric Specialty Co. had a background of deep blue, with the word "Crystal" in white, outlined in silver tinsel. Ropes of tinsel and chains of colored lights hung from the ceiling, and electric washers, ironers and sewing machines were demonstrated, while fancy lamps—floor stand and boudoir lamps, together with fixtures, were also widely featured.

The Gas and Electric Shop had a booth of white, with crossbars of purple, and the posts twined with green foliage. On the posts at the entrances on each of the four sides were kewpie dolls with wide spreading silk skirts, each acting as shade for an electric bulb. There was a tree hung with electric bulbs of different colors and throughout the booth washers, ironers, wringers and vacuum cleaners were being demonstrated.

The Jas. Clark Electric Co. had a booth hung with green foliage, while floor lamps with rose silk shades and tall palms gave an air of luxuriance to the room. A table at one side held a percolator, toaster and grill as well as dainty cups and saucers, while on the other side an electric range, vacuum cleaner and washing machine were being demonstrated. Interest centered in the vacuum cleaners, each visitor receiving a ticket, and at the conclusion of the two weeks exhibit a Royal Cleaner was given to the person holding the lucky number.

Realizing that a great many people would be attracted by the exposition the merchants arranged a number of up to date exhibits to attract the visiting merchants and pre-holiday shoppers. Stewart & Co. had their entire store ablaze with electric lights. The house furnishing department, in the basement, had a special room fitted up as a model laundry where washing machines, ironers, and irons were demonstrated on different days.

Herman Straus & Sons Co. had a decidedly interesting display of vacuum cleaners, one of their large double windows being entirely given over to a display of this line.

The Theuman Engineering Co. displayed in their window a washing mashine, wringer and vacuum cleaner, and advertised:

YOUR WASHING—
DO IT THE MODERN WAY

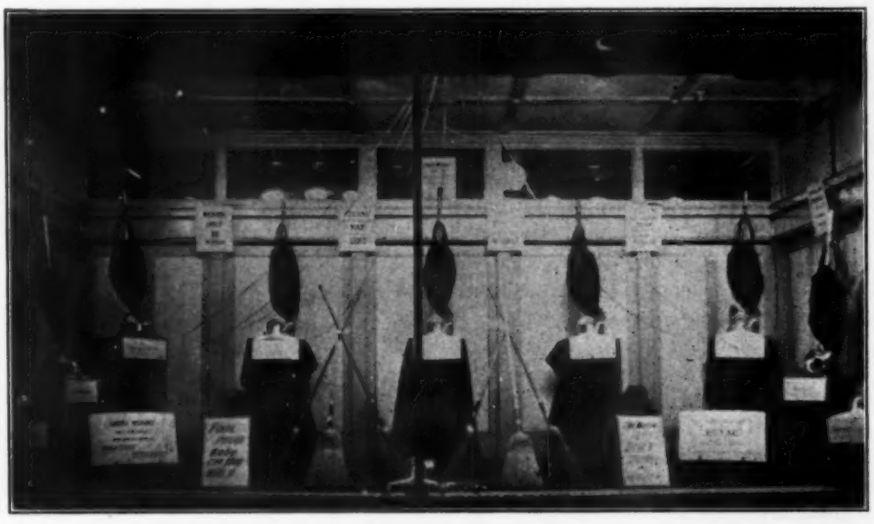
Be a progressive house manager, not a drudge. Use up-to-date tools. Electric washers make every day Sunny Monday—they make the soiled clothes fresh and sweet—save the time of yourself or your maid—a decidedly worthwhile investment.

The Gas and Electric Shop was a combination of red white and blue. The walls were white and on the background was a fan shaped arrangement of streamers of red and blue paper. The floor was covered with white with ribbons of red and blue for a border. The bracket lamps, chandelier and big floor lamps all had shades of red, white and blue.

The H. C. Tafel Electric Co. had a striking and attractive display that while arranged for Christmas, could, with slight alterations, be converted into an equally effective spring bride or anniversary window. Several broad steps extending entirely across the window were constructed, and these, as well as the floor and wall were covered with sky blue crepe paper.

Just inside the store entrance was a table set for breakfast, showing the percolator, toaster and hot water heater. There were also the usual silver and china, and a card said:

GET YOUR BREAKFAST
ON THE DINING
ROOM TABLE
No need to enter the



Window Display of Herman Straus & Sons Co., Louisville, Ky.

Household Appliance Window Trim of H. C. Tafel Electric Company, Louisville, Ky.

kitchen until after breakfast. The bread the eggs and the coffee can be placed on the table the night before, and then at the simple turn of the switch delicious coffee, toast and eggs, either hard or soft boiled, can be prepared in a few minutes.

Removes to New Store

Enterprising Contractor-Dealer of Allentown, Pennsylvania, Celebrates Event

The Allentown Leader, under date of May 21, gives the following account of the celebration held in honor of the opening of the new business place of the Lehigh Electric Company of that city:

"An affair that will long be remembered with pleasure by every one present was the dinner given last evening by Abbott S. Weibel in commemoration of the successful formal opening of the new home of the Lehigh Electric Co., of which he is the proprietor, at 28 North Sixth Street.

"At the same time he took advantage of the occasion to call together the dealers in this section whom he supplies to provide more perfect coöperation for the distribution of the appliances he handles.

"In addition, there were present all the employes of the Lehigh Electric Company, together with a number of Mr. Weibel's personal friends.

"Like everything he does, he did this well, all arrangements and appointments being perfect, and he revealed himself as an unexcelled host and toastmaster.

"The affair began with an assembling of the guests at 5:30 for an inspection of the new location of the Lehigh Electric Company, one of the best-equipped buildings in the city for its line of business. Mr. Weibel personally supervised the remodeling of the structure for his use, making of the former Berger home a metropolitan electric store, the largest and finest in Pennsylvania outside of Philadelphia and Pittsburgh. One notable thing about it is the fine concrete sidewalk, for which he is blessed by all pedestrians.

"Inspection over, the party proceeded to the Hotel Allen, where the long table in the grill room had been set for the serving of a wonderful menu, topped by broiled lobster and roast chicken. Mr. Weibel was flanked by some of his associates on the Speed Committee of the Great Allentown Fair, of which he is the capable treasurer.

"Among the guests also were a number of competitors in this and other towns, especially men who had formerly been in his employ, and he expressed his pride that they had received such training with him that they had developed into first class business men, able to get along on their own hook.

"As might be expected at an electric dinner, everything was modern and snappy, especially the talks of the experts whom Mr. Weibel had secured to speak in a more or less technical way about the sale of appliances and the service they give.

"The keynote of all of Mr. Weibel's talk as toastmaster was service and the good they could render the community. Without service he does not want to be in business, and every customer must be a satisfied one. Both popularity and success have come to him through this policy.

"Taking the assemblage, as it were, under his wing, Mr. Weibel personally greeted each guest and also formally introduced each one to the gathering and then made out of the affair a sort of family conference.

"The talk of each was topped off with some valuable suggestions by Mr. Weibel, who also showed himself as considerable of a student of modern business methods.

"The affair was voted a huge success, and adjournment was made with thanks to the royal host for a most profitable evening."

Pushing Sales of Electric Washers

The John Van Range Co., Cincinnati, O., taking advantage of the Own-a-Home show held May 21-28, staged an intensive electric washing machine campaign that closed on May 31. They took large space in the newspapers to call attention to their booth at the Own-a-Home show, where these washing machines were kept in constant operation. Circulars were given out at their store and also at their booth offering an electric washing machine free to the person making the best answer to the proposition: Give three reasons why the Prima electric washing machine should be in every household and why it excells.

The answers had to be written on the official contest blank, which was given out only at the store. When a person called for a card he was given one, and also literature explaining the merits of this particular washing machine. This he could read at his leasure before attempting to give his reasons. Not only was the washing machine given as the first prize, but there were a number of consolation prizes, including a double roaster, set of silver tea and desert spoons, carving set and a white enamelled bread box. Only adults

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could enter the contest and the judges were three Cincinnati business men.

During the week of the contest daily demonstrations and talks on the good points of the machine were given at the store as well as at their booth, so that a person attending the different talks was in a pretty good position to discover the good points of that particular machine. In addition, hearing the lectures, and seeing the results achieved by the electric washer, by the end of the week they were pretty well sold on its advantages, and even if they did not win the prize, many sales were traced to this educational campaign.

Opens New Home

Contractor-Dealer in Raleigh, North Carolina, Describes Electric Conveniences

Perhaps the first thing that a well regulated business owes to its proprietor is an electrical home. N. L. Walker of Raleigh, North Carolina, a member of the National Association and an active worker in organization affairs, has just completed such a residence for himself.

Mr. Walker's new home stands on a knoll at the intersection of Hillcrest and West Park Drives, Cameron Park, Raleigh, N. C. The entire frontage on the two drives is almost three hundred feet, the intersection making a circle instead of a right angle turn.

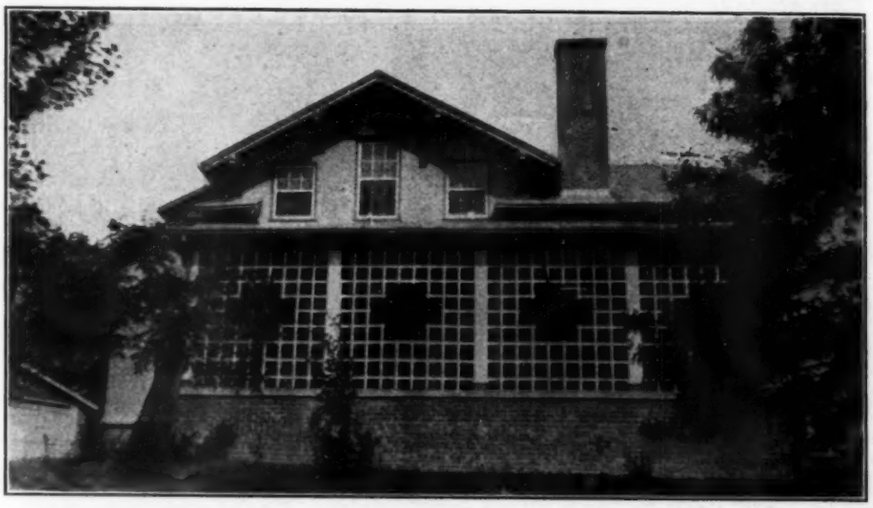
A friend has given the name of Alta Villa to this new place of residence. It has composition shingle roofing, stucco siding, and concrete porches. A fire hydrant is located on the adjacent curb, which brings the insurance rate down to twenty-nine cents.

Mr. Walker says the electrical features are not spectacular, but consist of just about what the average home requires. He describes them as follows:

"Entrance porch, being adapted to them, has two entrance standards. The switches at livingroom and diningroom doors, respectively, and a convenience plug. Entrance hall has two candle brackets, with canopy switches, and a four candle stair on stair landing, controlled by 3 way switches. Second floor hall is lighted by this standard and has a convenience outlet. Rear hall and telephone station has a bracket. Livingroom, center fixture, six brackets, 2 candelabras on mantel, and a convenience outlet. Diningroom, center candle fixture, four candle brackets in silver, and a convenience outlet. Bedrooms have from two to four brackets and the main ones, center fixtures. All brackets are controlled by canopy switches or pull sockets. Breakfast room, a ceiling light and a convenience outlet. Rear porch, a bracket and iron outlet. Basement, five drops. Garage, a light on front, two drops and a convenience outlet.

"Last, but not least, the kitchen has an electric range, a ceiling light, and a convenience outlet. Say! Did you ever eat a piece of angel food cake, the batter for which had been placed in a cold electric oven and the heat turned on just as the door was closed?"

The accompanying illustrations show two views of Mr. Walker's home and from external appearances it is one that anybody could easily enjoy.



Summer Living Porch of Mr. Walker's New Home at Cameron Park, Raleigh, North Carolina

Front View of Alta Villa, Home of N. L. Walker, Contractor-Dealer of Raleigh, North Carolina

Proposal for Lighting Equipment

Uniform Contract is Advised for Use of Fixture Dealers

J. L. Wolf of Cleveland, Ohio, the able and active secretary of the Lighting Fixture Dealers' Society of America, through the courtesy of Fred Farmer, president of the Beardslee Chandelier Manufacturing Company of Chicago, has sent out to his membership original copies of the new uniform contract which has been adopted by the Chicago Lighting Fixture Council.

The form is printed on a large folded sheet, the four pages of which each measures 8½x11 inches, the first and last pages being used respectively for the company's name and the usual legal blank form for filing data.

Mr. Wolf submits this form as evidence of what can be accomplished through coöperation, and urges his membership also to coöperate on standardization—especially the standard attachment plug, which he asks them to

insist on having on all portable electric devices.

A reprint of the uniform contract form in question is printed below. Preceding the text are blank lines for filling in the name of the one to whom it is addressed, and at the end are the usual blank lines for acceptance, approval, date, etc.

For the net sum of $————, and subject to the conditions stated below, we propose to furnish you certain lighting equipment:

1. The equipment is that specified on the————attached sheets, forming a part hereof.

2. The reference numbers designating the items refer either to our printed catalogue or to our special designs.

3 All materials to be in accordance with out standard specifications and methods of manufacture.

4. This proposal is for equipment, without lamps————installed f. o. b., Chicago.

5. Order for the equipment included in this proposal will be accepted contingent upon our ability to obtain necessary raw materials and labor for manufacture of product required to fill same; further, we are not to be held liable for strikes, fires, accidents or any other causes beyond our control.

6. Terms of payment: net cash, no discount, 85% of the billing price of any part of this equipment will become due and payable as the work progresses, balance when installation is complete.

7. Quotations are for immediate acceptance, and subject to change without notice. Errors are subject to corrections. No verbal understanding shall form a part of this contract.

8. Complaints regarding missing or broken glassware will not be recognized unless made within three (3) days after date of installation, no goods subject to return.

9. Fixtures are hung a certain height from floor, determined by conditions as they are found in individual cases, taking into consideration the height of ceiling, type of fixture, and the room in which used. Therefore, unless specified at time of placing order, we use our best judgment and any changes desired after fixtures are hung, will be charged for as extra.

10. An extra charge will be made for preparing outlets to properly receive fixtures selected, also for return trips occasioned by improper outlet conditions, as well as for the trips on complaints where defects are not found in our work.

11. Time charges are at the rate of $2.00 per regular working hour, for the full period of absence from shop, on the job in question.

12. We agree to replace any defective material as promptly as possible at our expense, but will not be responsible for consequential damages.

13. We maintain adequate employees' liability insurance under the Illinois Workingmen's Compensation Act, House Bill No. 841 of the 48th General Assembly. 1913.

14. This proposal (made in duplicate), when properly accepted by you and ratified by an Officer of this Company in Chicago, Illinois, shall constitute your order on us for the equipment included herein, which cannot be countermanded or altered except with our written consent.

Western Electric Company's New Building

Covers Entire Block in New York City and Now Ready for Occupancy

Just a year ago mention was made in these columns that the largest concrete building ever erected on Manhattan Island was under way and would be occupied within a year. This is the new building of the Western Electric Company, which occupies the entire block between Hudson, Greenwich, Houston and Clarkson Streets, New York City.

A year ago last May the ground which was purchased from the old Trinity holdings, was broken, the construction was started, and a year later some of the supply department offices were removed to these fine new quarters. Quick work in these days of labor troubles and delayed shipments of raw materials.

The building is ten stories high, with a basement covering the entire ground area, is of fireproof construction, built of brick and concrete, and contains modern facilities throughout, including the latest developments in electric equipment.

The building will house the supply department of the company, which heretofore has been widely scattered on account of not having room for it under one roof. On one side of the ground floor of the new building, space is reserved for receiving goods, while on the opposite side are the shipping platforms where a dozen or more trucks can be loaded at one time, shipments being delivered from the various floors by automatic conveyers.

Space is reserved in the new building for the Western Electric International Company and for the offices of those directly connected with the supply department. Other floors are occupied by the repair department and for assembling; also for telephone equipment and supplies. In addition to this there is ample room in this immense building for the storage of electric washers by the train load, and all other electric appliances and devices can be received and handled in carload lots.

The building was erected at a cost of something like four and a half millions of dollars. It is thought that all departments will be in full operation by the fifteenth of this month, which is just about a year since the actual work of construction began.

New Firm

James M. Gagen has joined with Elvin J. Becker in establishing the firm of Gagen & Becker, Electrical Contractors and Engineers, 750 West 181 Street, New York, N. Y.

Mr. Gagen has been identified with the electrical contracting business in New York City for the past fifteen years,

Pleasing Window Trim in Store of William Ward Crane, 665 Mt. Prospect Avenue, Newark, N. J., Which is Bright and Attractive, Showing Real Dogwood Blossoms at Left

being the founder and president of Gagen & Butler, Inc., from which office he has recently resigned.

Mr. Becker has been engaged for fifteen years on large engineering and construction operations throughout the South and Middle West of the United States.

These men being technical graduate engineers, with extensive experience, their combination should prove effective and efficient.

New Company Organized

William G. Yates, formerly general manager of the Adams-Bagnall Electric Company, Cleveland, and for over fifteen years connected with electrical jobbing and manufacturing concerns in the

William G. Yates

Middle West, has organized the William G. Yates Company of Cleveland to manufacture a new, light, hundred dollar household ironing machine which will be known as the Cottage Ironer.

While with the Adams-Bagnall Electric Company, prior to its absorption last year by the National Screw & Tack Company, Mr. Yates built up a fractional horse-power motor business from drafting board to over 5,000 per month production in less than nine months' time, although previously he had been engaged in sales and administrative work and had no manufacturing experience.

Associated with him in the William G. Yates Company will be several men well known in the electrical industry. The company, while "making its bow" with the small family ironer, has several other household electrical appliances fully developed and ready to go into production as rapidly as the business can be organized and expanded.

Government Reports by Radio

The test made by the Bureau of Standards, Washington, D. C., of the Westinghouse radiophone has been reported satisfactory, and as a result has been inaugurated whereby the United States market reports will be sent broadcast through the Westinghouse radio telephone station, KDKA, at East Pittsburgh, each evening except Sunday, at about 9:30, on a 330 meter wave length.

On Monday, Wednesday and Friday evenings, added to the Chicago live stock report will be the hay and feed report, and on Thursday and Saturday evenings, the grain report. Also on Tuesday, a potato or other fruit or vegetable report will be given.

It is possible that farmers within a distance of hundreds of miles of East Pittsburgh will learn of the agricultural market conditions and prices immediately after the closing of the market.

Talk to the Women

There's good publicity for the dealer in taking advantage of opportunities for talks before women's clubs on the use of electric appliances. The point is brought out in an article in the April issue of Royal Breezes, monthly house organ of The P. A. Geier Company of Cleveland, Ohio. He must treat the subject from a broad, non-commercial point of view, but if it is handled in this way, in a fair, impartial spirit, the women will be appreciative listeners and the dealer will soon acquire a reputation for being an authority in this field in his particular community.

More and more clubs are including the electrical side of housekeeping in their study of home economics. The dealer does well to cultivate their acquaintance and gain their confidence.

Market For Electrical Goods

Despite the relatively small white population in South Africa, large quantities of electrical goods are purchased, chiefly because of the requirements at the mines, says Trade Commissioner R. A. Lundquist in a special report on the South African market for electrical goods just published by the Bureau of Foreign and Domestic Commerce of the Department of Commerce. The figures in the Trade Commissioner's report show that in the year 1919, South Africa imported more than $5,000,000 worth of electrical and allied material.

Before the war Germany was an important factor in the market. Since the beginning of hostilities in 1914 very substantial gains have been made by the United States. On the whole the trade commissioner is optimistic as to the future of American trade in this field.

Founded in 1886, and until 20 years ago little more than a mining camp, Johannesburg is today a modern city, with many buildings of five, six, and seven stories in the business district. With the mining companies of the Transvaal buying about $67,878,146 worth of all kinds of machinery, supplies, etc., in 1918, all the important business houses in the country have establishments in Johannesburg and carry heavy stocks. This city is the logical selection for American manufacturers of electrical goods who contemplate establishing a representative in the South African market says Commissioner Lundquist, who calls attention to the fact that prior to the war German manufacturers had their own branch houses, with stocks in Johannesburg.

Building for Future Big Business

National Metal Molding Company of Pittsburg has issued a large pamphlet setting forth its very efficient and extensive advertising campaign for this year. The printing is in several different colors, showing the company's many sales helps. In addition to business papers, the campaign includes a series of advertisements in the Saturday Evening Post to run until October. so that the public will be induced to heed the new National Molding slogan: "Brings Electricity Where Needed." Such advertising will surely build for big business in the future.

Acme Vase Attachment

The Acme Lighting Fixture Co., Inc., New York City, is sending out a circular advertising the Acme Vase Attachment, which is termed "A self starter for your cash register."

The springs of the Acme Vase Attachment are made so that they will bend to fit any style of vase made and flanges are furnished large enough to fit any vase opening.

Your interest in those you wait upon will be reflected in your sales book.

ORGANIZATION ACTIVITIES

A Department Devoted to the Reports of State and Local Meetings

STATE CHAIRMEN AND SECRETARIES

State	Chairman	Secretary
ONTARIO, CANADA:	E. A. Drury, 164 Oakwood Av., Toronto	J. A. McKay, 24 Adelaide St., W., Toronto
BRITISH COLUMBIA:	E. Brettell, 781 Granville St., Vancouver	J. C. Reston, 611 Howe St., Vancouver
CALIFORNIA:	C. L. Chamblin, 643 Call Bldg., San Francisco	J. W. Redpath, 643 Call Bldg., San Francisco
COLORADO:	J. Fischer. 213 15th St., Denver	W. A. J. Guscott, 715 18th St., Denver
CONNECTICUT:	E. S. Francis, 272 Asylum St., Hartford	Geo. M. Chapman, 43 E. Main St., Waterbury
DISTRICT OF COL.:	Frank T. Shull, Conduit Rd. and Elliott St. Washington	H. R. Harper, 635 D St., N. W., Washington
FLORIDA:	T. E. Satchwell, Jacksonville	J. G. Spencer Palatka
GEORGIA:	Henry Morton 1227 Broad St., Columbus	C. B. Anderson Walker El. & Plain. Co., Columbus
INDIANA:	A. B. Harris, Gary	A. I. Clifford, 507 Odd Fellows Building, Indianapolis
IOWA:	Louis L. Corry, 510 Brady St., Davenport	
KANSAS:	C. S. Smallwood, 1017 N. 5th St., Kansas City	Arthur Tucker, 619 Jackson St., Topeka
LOUISIANA:	C. S. Barnes, 513 Gravier St., New Orleans	R. S. Stearnes, 336 Camp St., New Orleans
MARYLAND:	S. C. Blumenthal, 505 N. Eutaw St., Baltimore	C. Philip Pitt, 15 E. Fayette St., Baltimore
MASSACHUSETTS:	Geo. B. Quinby, Boston	J. E. Wilson, 263 Summer St., Boston
MICHIGAN:	Henry Roseberry, 41 Pearl St., Grand Rapids	H. J. Shaw, 613 Lincoln Bldg., Detroit
MINNESOTA:	Emil Anderson, 240 Plymouth Bldg., Minneapolis	Arthur P. Peterson, 2395 University Av., St. Paul
MISSOURI:	W. J. Squire, Kansas City	A. J. Burns, 533 Delaware St., Kansas City
NEW JERSEY:	Geo. E. Davis, 23 Central Ave., Newark	Elmer D. Wilson, Newark
NEW YORK:	F. A. Mott, 29 St. Paul St., Rochester	J. P. Ryan, 26 Cortlandt St., New York City
OHIO:	C. L. Wall, 212 S. Main St., Akron	Walter R. Keefer, 939 E. McMillan St., Cincinnati
OREGON:	Roy C. Kenney, 388 Burnside St., Portland	F. R. Whittlesey 212 Henry Bldg., Portland
PENNSYLVANIA:	R. W. Keck, Allentown	M. G. Sellers, 1518 Sansom St., Philadelphia
TENNESSEE:	P. W. Curtis Chattanooga	J. A. Fowler, 10 S. Second St., Memphis
WASHINGTON:	S. G. Hepler	Forrest E. Smith, 205 Boston Block, Seattle
WISCONSIN:	B. L. Burdick, 72 Water St., Milwaukee	H. M. Northrup, 25 Erie St., Milwaukee

LIST OF LOCAL ASSOCIATIONS AND MEETINGS

State and City	Local Secretary	Street Address	Time of Meet.	Place of Meet.
ALABAMA				
Birmingham	--------	--------	Mon. Noon	Hillman Hotel
Mobile	E. J. Hueguenot	--------	Fri. 5:30 p. m.	Members' Offices
CALIFORNIA				
Berkley	J. M. Gregory	Pacific Bldg.	Fri. 8 p. m.	Pacific Bldg.
Covina	F. Rambo	-------	1st & 3rd Mon.	Ontario
Long Beach	O. W. Newcomb	308 E. 4th St.	Tues. Ev'g.	Spaulding's
Los Angeles	H. T. Muxall	628 U. Oil Bldg.	--------	Denver
Oakland	J. Gregory	Pacific Bldg.	Tues. 8 p. m.	Pacific Bldg.
San Francisco	A. Elpins	165 Jessie St.	Wed. 1:30 p. m.	165 Jessie St.
Van Nuys	Los Angeles Ass		Tues. 6:30 p. m.	Pin Ton Cafe
COLORADO				
Denver	L. B. Roberts	227 Coronado Bldg.	2d & 4th Tues.	227 Coronado Bldg.
CONNECTICUT				
Hartford	H. D. Hitchcock	45 Preston St.	Call of Sec'y	118 Asylum St.
New Britain	F. Mulvehill	--------	--------	--------
Waterbury	A. S. Jordan	Conn. Lt.& P.Co.	Monthly	192 Grand St.
DIST. COL.				
Washington	--------	--------	2d Thurs. ea mo., 8 p. m.	Dewey Hotel
FLORIDA				
Jacksonville	W. L. Joseph	155 E. Forsyth	1st Tuesday	208 Realty Bldg.
Miami	C. E. Pullen	Pullen-Zoll Co.	--------	--------
ILLINOIS				
E. Moline	E. J. Burns	Rock Island	--------	--------
Chicago	J. W. Collins,	179 W. Washington St.	2nd & 4th Wednesday	--------
E. St. Louis	O. J. Birmette	--------	Sat. 2 P.M.	Arcade Bldg.
La Salle	Ed. Blaine	--------	1st & 2nd Tues.	Post Hall
Rock Island	E. J. Burns	219 18th St.	1st & 3rd Mon.	219 18th St.
Streator	Wm. Schroder	613 Tyler St.	--------	--------
INDIANA				
Evansville	C. E. Jett	--------	Wed. noon	Y. M. C. A.
Gary	A. B. Harris	570 Washington	--------	--------
Indianapolis	G. L. Skillman	29 S. Capitol Ave.	1st & 3rd Thursday	Commercial Club
Warsaw	F. E. Strauss	120 W. Market St	Wed. Ev'g.	--------
IOWA				
Davenport	E. Burns	Rock Island	2d & 4th Mon.	Rock Island
Waterloo	J. A. Harleip	Care Waterloo Elec. Sup. Co.	--------	--------
KANSAS				
Topeka	H. S. Lee	816 Kansas Ave.	Mon. Noon	Elk's Club
KENTUCKY				
Paducah	W. R. Kitterjohn	--------	Last Thurs.	--------
LOUISIANA				
New Orleans	R. S. Stearnes	336 Camp St.	1st Weds.	Teocalli Hall,
MAINE				
Portland	H. T. Boothby	222 Middle St.	1st. Mon.	--------
MARYLAND				
Baltimore	C. P. Pitt	15 E. Fayette	1st & 2d Tues.	Elk's Club
MASSACHUSETTS				
Boston	J. E. Wilson	263 Summer St.	3d Thurs.	Boston City Club
Fitchburg	R. M. Gowell	--------	1st Mon.	Fay Club
Haverhill	H. W. Porter	24 West St.	2d Mon.	El. Lt. Sta.
Worcester	L. H. Treadwell	681 Main St.	2d Thurs.	44 Front St.
MICHIGAN				
Detroit	H. Shaw	613 Lincoln Bldg	Last Thurs.	G. A. R. Hall
Flint	J. Markle	718 S. Saginaw	--------	--------
Grand Rapids	----------	---------	Tues. Noon	Ass'n of Com.
Kalamazoo	M. Randall	Exch. Place	--------	Cham. Com.
MINNESOTA				
Duluth	Alfred L. Foster	210 W. 1st St.	1st Tuesday	--------
Minneapolis	Roy Constantine	2395 University Ave., St. Paul	2d & 4th Tues.	Builders' Exch.
St. Paul	Roy Constantine	2395 Univer. Av.	2d & 4th Mon. 6:30 P. M.	Elk's Club
MISSOURI				
Kansas City	Mr. Brown	809 Delaware	Tues. Evenings	University Club
St. Louis	A. J. Dunbar	Frisco Bldg.	Wed. Evening	Am. Hotel
NEBRASKA				
Omaha	T. Mustain	315 Neville St.	--------	--------
NEW HAMPSHIRE				
Portsmouth	F. C. Hatch	Kittery	2d & 4th Wed.	--------
NEW JERSEY				
Atlantic City	F. P. Wright	16 Ohio Ave.	1st Thursday	Malatesta Hotel
Jersey City	Wm. Doellner	743 Bergen Ave.	--------	P. S. Bldg.
Newark	Geo. E. Davis	23 Central Ave.	1st Monday	23 Central Ave.
Paterson	H. M. Desaix	88 Ellison St.	Last Friday	P. S. Bldg.
NEW YORK				
Albany	E. A. Jones	31 Hudson Ave.	1st Thursday	Pekin Rest'nt
Binghamton	A. H. Hyle	----------	----------	----------
Brooklyn	H. W. Walcott	12 Nevins St.	1st Mon.	Cham. Com.
Buffalo	E. P. McCormick	555 Wash. St.	Fridays	507 Elec. Bldg.
Cooperstown	B. B. St. John	Oneonta	3d Tues.	Vanon
Endicott	A. H. Hyle	Binghamton	Tues.	Cham. Com.
Jamestown	Henry Lund	309 Main St.	3d Mon.	Mfgrs. Ass'n.
Kingston	M. C. Rivenberg	--------	----------	----------
Nassau-Suffolk	J. A. Palmer	Huntington	----------	----------
New Brighton	E. L. Taylor	Tottenville	----------	----------
N. Y. Sec. No. 1	J. P. Ryan	26 Cortlandt St.	1st Thurs.	Penn's Hotel
Independent Sec. No. 3	John Perass	22 Chambers	1st and 3d Wed.	McAlpin Hotel
Ass'd. El. Con.	L. F. Lwedecke	----------	----------	----------
Oneonta	H. S. Beidelman	260 W. 86th St.	2d & 4th Wed.	226 W. 58th St.
Rochester	B. B. St. John	--------	3d Thursday	----------
Schenectady	Theo. Benz	State St.	Mon. 6:15	Builders' Exch.
Syracuse	Mr. Spengler	McClellan St.	Subject to call	----------
Troy	H. N. Smith	P. O. Box 809	1st & 3d Monday	----------
Utica	H. W. Boudey	First St.	1st Tues.	Gas Office
Westchester	Mr. Hall	Gray Elec. Co.	Monthly	Elks' Club
Watertown	I. W. Austin	White Plains	----------	----------
Woodmere	L. B. Smith	Roth Block	3d Fridays	Utilities Bldg.
Yonkers	Geo. La Salle	Westbury	--------	----------
	Mr. Mayer	Manor House Sq	Monthly	--------
OHIO				
Akron	L. C. Wall	12 S. High St.	--------	Elec. Co.
Cincinnati	W. R. Keefer	939 E. McMillan	Tues. 3 P. M.	Cham. of Com.
Cleveland	Geo. D. Biery	E. 95th St.	1st & 3d Thurs.	Builders' Exch.
Columbus	O. A. Robins	Ernest Hopkins	2d Wed.	Builders' Exch.
Springfield	J. R. Yost	--------	2d & 4th Fri.	----------
Steubenville	D. C. Hartford	--------	1st Wed.	Nat. Ex. Bank
Youngstown	W. Woobeck	Hood Elec. Co.	Mon. 6 P.M.	New China Res.
OREGON				
Portland	F. R. Whittlesey	212 Henry Bldg.	2d & 4th Monday	Cham. of Com.
PENNSYLVANIA				
Allentown	A. Hill	Bethlehem	Monthly	----------
Bethlehem	A. H. Hill	510 W. Main St.	--------	----------
Catasauqua	W. T. Kleppinger	--------	Last Thursday	----------
Dubois	C. E. Blakeslee	--------	Monthly	----------
Easton	G. E. Hill	Bethlehem	Monthly	----------
Erie	Earl Stokes	Bldrs. Exch.	----------	Bldrs. Exch.
Lancaster	A. Deen	--------	3rd Friday	Und'w't'rs Offic
Philadelphia	M. G. Sellers	1518 Sansom St.	2nd Thurs.	Builders' Exch.
Pittsburgh	Geo. Burrows	10 N. Diamond	--------	----------
Scranton	A. J. Fowler	Bd. of Tr. Bldg.	Tues.	Zenke's
St. Marys	C. E. Blakeslee	Dubois	Mon.	----------
York	A. E. Harris	E. King St.	2d & 4th Tues.	----------
SOUTH CAROLINA				
Columbia	E. L. Cashion	Sumter, S. C.	--------	----------
Greenville	E. C. DeBruhl	Ideal Elec.	----------	----------
TENNESSEE			Wednesday	
Chattanooga	Carl Schnider	412 Kirby Av.	Noons.	Manhattan Cafe
Knoxville	H. M. Moses	615 Market St.	Monthly	Rwy. Lt. Co.
Memphis	H. A. Street	285 Madison Av.	Ev. other Wed.	Allyn Cafe
Nashville	J. B. Mullen	Arcade	1st & 3d Wed.	Tularie Hotel
TEXAS				
Dallas	P. B. Seastrunk	Lepscombe Elec. Co.	Wed. 8 P.M.	1805 Main St.
VIRGINIA				
Norfolk	K. D. Briggs	Arcade Bdg.	Wednesdays	Old Col. Clb.
Richmond	W. A. Cutlett	Jeff. & Grace Sts	--------	----------
WASHINGTON				
Seattle	T. C. Smith	--------	--------	--------
WISCONSIN				
Milwaukee	Henry C. Hutton	719 Majestic Bld.	2nd Tuesday	Maryland Hotel
CANADA				
Toronto	J. A. McKay	110 Church St.	1st. Thur.	Bd. of Trade
Vancouver	H. R. Hargreaves	Pacific Bldg.	--------	--------

Associations can secure listings here by sending necessary data to the National office

Connecticut Association Meets

Harry Kirkland Presents His Skit With W. D. Yates, Winning Much Applause

The regular meeting of the Connecticut Association of Electrical Contractors and Dealers was held at the Hotel Garde, New Haven, on June 1, 1921.

The meeting was of exceptional character and those of our members who failed to attend missed very much of interest and value.

The Association discussed the sale and advertising of unapproved appliances, and warned its members against the purchase and sale of appliances that had not been approved and their safety and utility fully proved and demonstrated.

The reason for this discussion was due to the experience of some of our members with a certain type of immersion heater, which has been widely advertised in some of the trade journals, and while not stating it to be an approved device it was put forward as a desirable article for domestic use; but suspicion being raised against it the article was tested informally and later by a testing laboratory with the result that the label was found to be misleading, and a definite hazard to life was established. Hence the caution to our members.

The Association also went on record as favoring the elimination of all fuses in grounded neutrals in three-wire systems, and in the grounded wire of a two-wire system. It was also voted that the Connecticut Association bring this matter before the National Association for consideration with a view to its adoption in the Code.

Our motive in the above matters is to let nothing get before the public for its use that is not safe and reliable, or which will in any way cast any suspicion or discredit on any appliances for public use, so far as we can prevent it.

The meeting was addressed by several gentlemen who presented their subjects in a pleasing manner.

H. B. Kirkland and W. D. Yates gave us their sketch on how to sell house wiring. The sketch evoked much applause, for it was so true to form that no one could fail to recognize the prospective house owner (Mr. Kirkland), who had already exceeded his proposed expense limit and who was about to try and cut down on his wiring job, and the progressive contractor (Mr. Yates) who not only convinced the owner that he should not cut down the plans, but also succeeded in adding to them in the interest of utility and convenience, with the result that the owner saw the advantages claimed and signed a contract for a figure considerably more than his original plans called for. The owner's only stipulation was that his wife should not be told by the contractor that the job was more than they had agreed to spend.

One of our members was so impressed by the talk that he was heard to say that he would like to hire that man (Mr. Yates) for a salesman but was afraid he couldn't afford it.

H. S. Wynkoop of New York spoke on the Code and its importance. He explained the way the Code was originally started and brought it down to date, showing how it is now formulated, by representatives of the different interests involved.

He told of the serious thought given to it and the desire to make it the only guide for electrical installation to safeguard the public and all others concerned.

T. H. Day of the N. E. Insurance Exchange talked to us on the grounding of secondary circuits and showed how the grounding idea had grown so that some who had originally favored it and who were suspected of mania on this subject, had stood by their opinions and had convinced their critics that they were right, and now even the critics were converted to the idea.

The Association was so convinced of the correctness of the solid ground with no fuses, that the action as outlined earlier in this article was taken.

A rising vote was given the speakers for their very enjoyable and valuable remarks.

The next meeting of the State Association comes on Sept. 7, 1921, and it was voted that it take the form of an outing. The details as to form and place were left to the Chairman and Secretary for arrangement.

The reports of the officers showed a good condition, both as to members and finances. Several new prospective members were named and the Treasurer reported a good balance in the treasury.

Each member was requested to canvass every other in his city and vicinity, and see that they attend our meetings, so that no one shall miss the valuable information provided at out meetings.

—Geo. M. Chapman, Secretary.

Meeting of Ohio State Association

Large Number in Attendance Gained Profit as Well as Pleasure

It seems to be one of the jobs that the secretary of an association has to do when he can't pass the buck and I am going to try to tell what happened at our last meeting held at Dayton, April 19 and 20. Of course I can only tell of what transpired at the meeting, as I did not attend any of the golf matches or other amusements.

The meeting was held at the Gibbons Hotel and there were 100 present, the same number attending the banquet that followed in the evening. After the regular business was disposed of and on account of the absence of the speaker for the afternoon the members discussed the labor situation as it was in the different parts of the State and it was a very attentative bunch of contractors that listened and then told their tales of woe—which were many, as labor agreements were up for renewal in many different localities. It was intensely interesting as both the open and closed shop partisans had their say.

Discussion by members of the practices of power and light companies in selling lamps and appliances below list prices led to the adoption of the following resolution which was sent to the National Electric Light Association:

Whereas, reports from different localities have been made to the convention of the Ohio State Association of Electrical Contractors and Dealers regarding the practice of Ceneral Stations merchandizing lamps and appliancec to the public at cost, either directly through their own departments, or through resale companies controlled by them; and

Whereas, this practice is deemed to be unjust to the electrical dealers and contractors, inasmuch as a certain volume of business is diverted from their established stores without increasing the normal demand for such articles by such cost prices; and

Whereas the very existence of the contractor-dealer depends upon a profit on the merchandise he sells, as in a like manner the central station must have a profit on its product in order to continue in business, therefore

Be it Resolved, that this association of electrical contractors and dealers in convention assembled request that the practice of such unfair competition by certain central stations be discontinued

as soon as possible in order that a closer bond of harmony and coöperation may be brought about in the industry and that a copy of this resolution be sent to the secretary of the N. E. L. A.

Grover Cleveland Maxwell (You can tell when he was born by his name) of Cleveland spoke on public utilities, and J. D. Conrad of Dayton gave a very interesting talk on illumination, after which the members took a look at some specially lighted show windows which were arranged for the occasion by the Dayton Contractors Association and exemplified the use of color lighting by use of gelatine screens. Different lines of merchandise were on display and the exhibition was very instructive as well as illuminating.

Wednesday morning Harry Turnock of the Cleveland Estimators' Club gave a talk on estimating, which, while much too short on account of lack of time, was well received by the members, who want to hear Harry again.

The meeting adjourned to the National Cash Register Co. and had dinner with the rest of the help in which they were fed at a cost of thirty-five cents each. And it was some dinner. After dinner they were entertained at the company's theater by a comedy film and then took a trip through the factory.

At the conclusion of this trip we were shown and heard an illustrated lecture on the plant and then finished the day by being shown a five reel picture taken at the plant and titled "Waste Can't Win," which showed how easy a workman can make his employer lose money.

The end of a perfect day was a visit to the new plant of the Dayton Light & Power Co. at Miller's Ford.

The next meeting will be held at Toledo July 18 and 19 so that as many as are able can attend the National Association's Anniversary Convention at Buffalo.

—Walter R. Keefer,
Secretary-Treasurer.

Convention in Kansas

New Officers Elected and a Number of New Members Join Association

The Kansas State Association of Electrical Contractors and Dealers held its annual Spring convention at the Baltimore Hotel in Kansas City, Mo., in connection with the Kansas City Electrical Show, on Wednesday morning, April 20.

Invitations to this meeting were sent out to all the contractor-dealers of the state, regardless as to whether they were members of the State Association or not. As a result of these invitations, and because of the attraction of the Kansas City Electrical Show, a large number of contractor-dealers were in attendance at this meeting. Four new members were secured.

At this meeting we also held our annual election of officers. C. S. Smallwood of the Smallwood Electric and Fix-it Company, 1017 North Fifth Street, Kansas City, Kansas, was elected president; William Schottler, 22 East 6th Avenue, Emporia, Kansas, was elected vice president; and Arthur Tucker of Topeka, Kansas, was elected secretary-treasurer.

A luncheon was served in the main dining room of the Baltimore Hotel immediately following the meeting, and after the luncheon those in attendance adjourned to attend the electric show at Convention Hall.

H. S. Lee, Retiring Secretary.

Wisconsin State Association Wideawake

Month's Membership Drive Brings Large Increase in Strength, and Many Activities Planned

The Wisconsin State Association, the first to take advantage of the National's offer to place Special Representative Laurence W. Davis for an extended period in a single State, are highly pleased with the result of his work on their membership drive.

Mr. Davis spent four weeks from May 11 to June 7 in Wisconsin in coöperation with the State Association officers, and visited twenty-two cities and towns, held a number of enthusiastic meetings, and secured about fifty new members, besides awakening in every old member he interviewed a better understanding of the possibilities of a strong active State organization and the value of the National Association's work. Mr. Davis made a study of the conditions throughout the State, and his report to the State Executive Committee contained many suggestions towards increasing the effectiveness of the State organization and improving working conditions for its members.

The Wisconsin State Association is especially interested in securing State legislation which will insure the public against incompetent work of irresponsible men, and encourage a better field of competition for responsible contractors by enforcing high standards of workmanship. A Licensing Law is planned to limit by adequate examination entrance into the electrical contracting field to competent men and to control adherence to standards in all work of licensed contractors.

At present, without such a law, electrical contracting is being done by anyone in most of the towns of the State, resulting in many cases in hazardous work and in all cases creating a chaotic condition in competition for responsible contractors from which the public is inevitably the sufferer. In one city visited by Mr. Davis, with nine recognized responsible electrical contractors, seventy-two men were granted permits to do electrical wiring in a single month. Most of these were unemployed factory workers, many of whom have never done electrical work before; several of them were still employed in other lines and did the wiring at night or Sundays. This condition is duplicated in many communities of the State and it is to protect the public against such hazardous condition that the State Association hopes to secure adequate legislation.

A very active Wisconsin local organization is the Association of Green Bay Electrical Contractors, which has 100% membership and has developed a fine spirit of coöperation.

They have just secured a city ordinance for licensing electrical contractors; are running a series of coöperative advertisements covering several months to educate the public to the need of patronizing responsible electrical contractors; and are members of an estimating association of all local contractors, through which a fair charge is made for estimating.

The Milwaukee district of the State Association has just started upon a new phase in its history, with plans for a wide field of progressive development work. Henry C. Hutton has been selected as full time secretary for the district, and entered upon his duties June 1, with his office at 719 Majestic Building.

Mr. Hutton has represented an electrical manufacturer in Wisconsin for several years and is known to all electrical men. He has had many years' legal experience; practiced law in Michigan twenty-five years and was prosecuting attorney for the county and city for several years; also has served as secretary of the Association of Commerce for many years. He brings to his new work an experience and a per-

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sonality which makes him well fitted for the responsibility.

Among the important activities planned by the Milwaukee District Association are an electrical exposition, electrical home, industrial and commercial lighting exhibits, coöperative advertising campaign, educational studies for the contractor-dealers on business management, overhead, etc.

The Electrical Exposition will be held in Milwaukee Auditorium from October 25 to 31, 156 booths being reserved, occupying the entire Exposition Hall. An industrial lighting exhibit will be installed; an ideal home lighting display arranged; a complete electrical bungalow will be erected on the stage, with a basement under the stage for a laundry display; and many other special attractions are planned.

One unique feature of this Electrical Exposition is that it is backed by the Milwaukee Journal, and payment for exhibitors' space is made part of advertising contracts, so that $50,000 in advertising will be spent in connection with the show. The combined educational value of this electrical exposition should be far reaching.

Chicago "Regulating Ordinance" Withdrawn

Great Mass Meeting of all Electrical Interests in Protest Proves Effective

Through the efforts of the Chicago Electric Club, Chamber of Commerce, and Electrical Contractors' Association, a great mass meeting of all electrical interests was held on June 2 before a sub-committee of the Chicago City Council in protest against the proposed city ordinance to regulate the sale of all electrical devices. The meeting was arranged during the N. E. L. A. convention in Chicago and was attended by over 500 representatives from all branches of the electrical industry.

This ordinance if passed would have placed in the hands of the city the power to establish a Bureau of Standards of its own that would, if the idea was adopted by other cities, soon create a condition of widely varying standards which would be impossible for manufacturers and distributors to meet. True standardization of materials is essential to the development of the industry, and such local regulation would reduce standard production and make satisfactory marketing and prices almost prohibitive.

Powerful addresses against such regulation were made at this mass meeting by Wm. L. Goodwin for the Society of Electrical Development; Frederick Vose for the Electrical Credit Association; Paul Westburg for the Chicago Chamber of Commerce; Mr. Hughes, president of the Edison Electrical Appliance Company; A. A. Gray and others.

As a result the bill has been withdrawn from the city council and the commissioner of gas and electricity has requested a conference with representatives of the electrical industry to consider revising it.

The industry is united in its conviction that no regulation which tends to impede standardization is advisable.

Roll Call of First Convention

National Headquarters Endeavored to Get in Touch with Those that Attended

Soon after the decision to hold the Anniversary Convention at Buffalo, where the first meeting was held twenty years ago, Secretary Morton of National Headquarters got out the original roll call and proceeded to get into correspondence with those that attended.

The object was to get as many as possible of those old timers to attend the Anniversary Convention. Of the forty-nine men who answered to the original roll call, twenty-four of them have said that they would go to Buffalo this month; five others replied that they would be unable to attend; three cannot be located; eleven are deceased; and six of the old timers did not respond, even after repeated solicitation by letter.

Following is a list of the original roll call, with present addresses given when ascertained, those deceased being marked (d):

H. Alexander, 20 W. 34th St., New York, N. Y.; M. J. Almstead, Judd Laundry Mch. Co., People's Gas Bldg., Chicago, Ill.

Frank L. Barnes, 93 Federal St., Boston, Mass; M. L. Barnes (d); W. C. Ballda, 228 Genesee St., Utica, N. Y.; E. Bochesenstein, 114 S. 12th St., St. Louis, Mo.; J. F. Burns, 442 State St., Schenectady, N. Y.; B. V. Butts, City Nat. Bank Bldg., Utica, N. Y.

W. A. Carrao, 33 Hermosa Ave., Long Beach, Cal.; Thos. E. Clark, Detroit, Mich.; E. D. Cooke (d).

S. Davis, c|o Conduit Wiring Co., 121 W. 42nd St., New York, N. Y.; C. A. Dainz (d).

C. L. Eidlitz, 1170 Broadway, New York, N. Y.

Frank L. Frost, Albany, N. Y.

C. A. Georgia (d).

Emil Haas, 3121 Schenandoah Ave., St. Louis, Mo.; J. P. Hall, 320 Fifth Ave., New York, N. Y.; H. G. Hatfield, 26 Bank Place, Utica, N. Y.; J. C. Hatzel, 373 4th Ave., New York, N. Y.; C. Haviland (d); J. S. Hilton, 318 Pearl St., Syracuse, N. Y.; M. S. Horton, 123 Mill St., Rochester, N. Y.

This Illustration and the one on Page 386 Show Two Views of the Offices of James E. Wilson, Secretary of the Massachusetts State Association of Electrical Contractors and Dealers, Secretary of the Boston Local, and Also Secretary-Treasurer of the Bureau for Better Illumination, a New England Organization with Headquarters in Mr. Wilson's Office, 263 Summer Street, Boston

G. M. Jones, 1946 Ry. Ex. Bldg., Minneapolis, Minn.; M. H. Johnson, 26 Bank Place, Utica, N. Y.

E. S. Keefer, 374 8th St., Brooklyn, N. Y.; E. B. Keller, 1213 Race St., Philadelphia, Pa.

H. E. Lindsay (d); H. A. Loeb, Tradesman Nat. Bk., Philadelphia, Pa.; W. W. Luckhorst (d).

Albert Mann, 326 Congress St., Boston, Mass.; A. J. Martin, c|o Com'l Constr' Co., 1 Madison Ave., New York, N. Y.; Geo. R. Mathieu (d); C. M. Morfit; W. H. Morton, 23 Washington Terrace, E. Orange, N. J.; E. McCleary, 423 Stevens Bldg., Detroit, Mich.; E. D. McCarthy, 75 Mohawk St., Buffalo, N. Y.

F. W. Newman, 76 Hudson Ave., Albany, N. Y.; F. E. Newberry, 644 Century Bldg., St. Louis, Mo.

R. Roughtell (d).

H. I. Sackett, 251 Pearl St., Buffalo, N. Y.; Rudolph Schmidt (d); E. I. Sherman; T. Carpenter Smith; J. G. Stearns (d); J. R. Strong, 526 West 34th St., New York, N. Y.; C. J. Sutter, 1220 Pine St., St. Louis, Mo.

B. A. Vandy, 705 Wilder Bldg., Rochester, N. Y.; S. A. Van Nort, c|o A. W. Van Nort, Railway Exchange Bldg., St. Louis, Mo.

Agent-Jobbers Meeting

Successful Program Carried Out, Including Golf Tournament

Samuel Adams Chase was chairman of the committee in charge of the splendid program carried out at Virginia Hot Springs by the Westinghouse Agent-Jobbers' Association.

Among the features of entertainment was a golf tournament, tennis, and other games, in which prizes were awarded the winners. About eighty people attended the meeting and all pronounced it a great success.

Officers for the ensuing year were elected as follows: President, A. J. Cole, Omaha, Neb.; vice president, John J. Gibson, Pittsburgh; secretary, J. E. Conaway, Memphis, Tenn.; treasurer and assistant secretary, H. T. Pritchard, Pittsburgh; and counsel, John J. Jackson, Pittsburgh. Executive Committee: J. C. Schmidtbauer, George S. Milner, S. A. Chase, M. C. Morrow, Charles Robbins, N. G. Harvey, F. D. Phillips, C. S. Walker, T. J. McGill and J. M. Curtin.

Among those in attendance were H. P. Davis, vice president of the Westinghouse Electric & Manufacturing Co.; H. A. Baetz, treasurer; W. K. Dunlap, acting vice president; J. C. McQuiston, manager of the department of publicity; John J. Gilson, manager of the supply department; and from associated companies, Elliot Reid, Warren Ripple and Ralph W. Everson, representing the Westinghouse Lamp Co., the George Cutter Co. and the Westinghouse International Co., respectively.

The next meeting of the Executive Committee of this Association will be held at The Homestead, Hot Springs, Virginia, week commencing November 28, 1921.

Stands by License Fee

Old Timer Proud of Ordinance and Criticises Action of New York State Association

June 13, 1921.

To the Editor of ELECTRICAL CONTRACTOR-DEALER:

Sir—As an electrical contractor of some years' experience in New York City, I feel impelled to take issue with one statement contained in an extract from the minutes of a recent meeting of the Board of Managers of The New York State Association of Electrical Contractors and Dealers, as given by Mr. J. P. Ryan in your June issue under the heading, Regulating Ordinances.

The statement is as follows:

> *"Statistics available indicate that where such laws exist, particularly in New York and Chicago, they have proved a serious detriment and involved an expense to the contractors for which no adequate service has been rendered."*

The license fee in New York is $10, with an annual renewal fee of $5. This is the sum of the "expense to the contractors," per contractor. Many, if not all, of the more important contractors have been urging a higher fee for the past six years.

There is no doubt that "the industry is suffering from the amount of work that is being done by others than those legitimately engaged in the contracting business." This has been done for twenty-five years. But under the ordinance it has become possible to ferret out and classify and punish those who do work without authority or in an improper manner. It was never known before just how bad the situation was. Now the facts and figures are known, and the remedies are being applied.

I do not believe that "there is a larger percentage of irresponsible so-called contractors in business in the territory covered by this ordinance than in any other section of the country." What I do believe is, that this class has been pretty well rounded up and the records taken; and the list is a very large one. But then, there are between 2,000 and 3,000 licensed contractors; and even a large list makes only a small percentage.

It is unfortunate that our laws did not permit the framers of the ordinance to introduce qualifications for eligibility of *reliability* and *business standing*. The ordinance, I am told, had to be confined to *competency*. That, however, should not condemn the ordinance. Surely an examination for competency prior to the granting of a license is better than no check at all.

Drive Out Incompetents

I would be delighted if the ordinance might be amended in some manner which would drive out of business our licensed competitors who have their offices in their hats. The incompetents have been fairly weeded out. The special permit men—those who cannot pass the license examination, but are able to obtain a permit to do some specific job by showing that they know how to do it—are the real curse of the business. I understand that these men file one-fifth of all the applications. No one who I have ever met justifies the existence of these special permit men, except the men themselves.

When one looks over the record of fines collected, of men reprimanded, of enforced correction of electrical defects as I have done it will be seen that the contractors are getting a great deal for their $5 yearly fees, even as matters stand. I am proud that I am one of those who worked for the passage of our ordinance six years ago.

Very truly,

An Electrical Contractor of New York City.

Fixture Manufacturers Postpone Meeting

The secretary-treasurer of the organization, Chas. H. Hofrichter, Cleveland, Ohio, announces that the midsummer meeting of the National Council of Lighting Fixture Manufacturers which was to be held at West Baden, Indiana, on July 6, 7 and 8, has been indefinitely postponed.

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N. E. L. A. Convention

Meetings Held at Chicago From May 31 to June 3 Were Well Attended

The annual convention of the National Electric Light Association was held at the Drake Hotel, Chicago, Illinois, from May 31 to June 3 and was attended by electrical men from all sections of the country. The following officers were elected for the ensuing year:

President, Milan R. Bump, of Henry L. Doherty & Co., New York City; first vice president, Frank W. Smith, of the United Electric Light & Power Co., New York City; second vice president, Walter H. Johnson, of the Philadelphia Electric Co., Philadelphia; third vice president, Franklin T. Griffith, Portland Railway, Light & Power Co., Portland, Ore.; fourth vice president, J. E. Davidson, Nebraska Power Co., Omaha, Neb.; treasurer, H. C. Abell, American Light & Traction Co., New York City; members-at-large of the National Executive Committee, R. F. Pack, Northern States Power Co., Minneapolis, Minn.; I. E. Moultrop, Edison Electric Illuminating Co. of Boston; E. W. Rice, General Electric Co., Schenectady, N. Y.; E. W. Robertson, Robertson-Cataract Electric Co., Buffalo, N. Y., and Rawson Collier, Georgia Railway & Power Co., Atlanta.

Martin J. Insull of Chicago, the retiring president, in his report, expressing the needs of utilities, said in part:

"It is estimated that for the next five years the electric light and power industry will require, to provide for the demands that will be made upon it by the public, approximately $1,000,000,000 per year. This sum will be spent for the necessary steam and hydro-electric generating equipment and transmission and distribution system with all the appurtenances necessary to give service. Put into figures that may be more easily appreciated, approximately $3,000,000 every day or $125,000 every hour for the next five years must be provided and used for the public benefit. If it cannot be provided the public will be the sufferer."

Walter Neumuller, New York Edison Co., chairman of the Membership Committee, reported an increase of approximately 3,000 during the past year, this gain establishing a new record of increase. The present membership totals approximately 14,200.

An amendment to the constitution was recommended to provide for a more equitable arrangement of membership fees.

The subject of better lighting has been well covered, according to the report prepared by Chairman P. B. Zimmerman, National Lamp Works of General Electric Co., Cleveland, and presented at a meeting of the Commercial National Section Tuesday afternoon, May 31. In this work it has received splendid coöperation from the editors of the electrical press, and as a result lighting has been the subject probably of more editorials and articles than any other one subject featured in the electrical magazines during the past year.

The News Syndicate & Magazine Writers' Division, Frank B. Rae, Jr., has confined its efforts to completing a photographic bureau to which magazine and syndicate writers may apply for acceptable pictures to illustrate their articles; also to the continuance of the experiment of supplying syndicate material to electrical pages of newspaper, and the preparation of a document setting forth completely all the various plans and methods successfully employed in starting and conducting newspaper electrical pages.

In the report of the Merchandising Division, presented by Chairman C. E. Greenwood of Boston, it was stated that the subject of Merchandise Cost Accounting has been capably handled by committees of the National Association of Contractors and Dealers and the Jobbers' Association. The National Electric Light Association has in mind the general study of the cost of operation of electric shops through the medium of one of our leading colleges that has made similar studies in other lines. If the plan is carried through it will be conducted by the four branches of the industry coöperating in the expense.

The report prepared by Chairman R. S. Hale, Edison Electric Illuminating Co. of Boston, stated that the general principle of the Division is to work along the lines of inciting the manufacturers of various merchandise articles to standardize tests of their articles and then publish the results of such standard tests. The ultimate cost of testing should be borne by the user. Further, the ultimate cost of testing should be really a negative quantity, that is, the making of these tests should in the end so improve the articles sold that the purchaser will get a better article at a less price than if the present method continues whereby the only method of determining whether an article is satisfactory is to put it into commercial use and then wait one or several years before the tests can be completed.

Boston's Better Lighting

J. E. Wilson, secretary and treasurer of the new Bureau for Better Illumination, sent out announcements of the opening demonstration of that exhibition which was held on June 15.

The new bureau operates under the direction of the Massachusetts Institute of Technology, the exhibit being located in the Rogers building, 491 Boylston Street, Boston.

Another View of Mr. Wilson's Office, With the Genial Secretary Himself at the Left, Caught in the Act of Dictating to His Stenographer

Adopts New Name for Utilities

Resolutions Passed by Advisory Committee of California Electrical Cooperative Campaign

At a recent meeting of division managers and department heads of one of California's power companies, it was suggested that the public service corporations of the state be no longer referred to individually by that name, but that collectively they be distinctly referred to as an industry.

There is no doubt a sound psychology to this suggestion, which upon a little study may become more apparent. The public mind is constantly subjected to varied influences, which after a time creat more or less definite impressions, finally consolidating into a general belief, which may be termed public opinion. Frequently these influences are of a sinister character and assume far reaching proportions. The corporation plan began to find favor in America about 1850, and was considered a step forward in the conduct of expanding business. The branch of industry engaged in the business of generating, distributing and delivering electrical energy, together with others engaged in transportation, communication, etc., came to be known in late years as a group of public utility corporations.

Now let us consider the meaning of these words, their fitness, the changes later adopted and why the most recent change in name may have been suggested. Public, of course, means the people. Utility means quality of being useful and capable of bestowing benefits to the greatest number. Corporation means combined into one body.

A public utility corporation then, is an institution fully capable of usefulness and to bestow benefits to the people with all the necessary agencies for such accomplishments combined into one body.

As these agencies became more efficient and the corporations realized that their obligation to the public was to give real service as implied by the word "utility", rather than the sale of a commodity, the name "Public Service Corporation" came into being. All during this time we saw certain influences depict the corporation as an opulent and corpulent individual, heartlessly preying upon the helpless; the result of which being largely due to the lack of real understanding on the part of the public, has unquestionably had the effect of engendering a feeling of mistrust and disfavor. The word "industry" seems to be agreeably accepted today by the majority, although perhaps not any better understood. The following would seem to define it: Any department or branch of art, occupation, or business which employs capital and labor and is a distinct agency for economic development and human advancement.

It is therefore resolved by the California Electrical Coöperative Campaign that in the future we refer to that industry which has contributed by the supply of electricity to the upbuilding of the state and the general advancement, prosperity and happiness of its people; as the Electric Power Industry.

Department of Commerce and Trades Associations

The general functions and activities of trade associations were discussed at a conference held last month between Secretary of Commerce Hoover and a committee representing the American Trade Association Executives. The executives' association is made up of representatives of old and established organizations of manufacturers and distributors of single lines of goods or services.

Representatives of the trade associations assured Mr. Hoover of their hearty approval of his recent statement in which he set forth the position of the Administration respecting trade organizations. They were told by the secretary that he was convinced that trade bodies have contributed largely to efficiency in industry and that collective effort, within the proper lines, has the approval of the government. A smaller number of associations, Mr. Hoover said, have engaged in questionable practices.

The Commerce Department, Mr. Hoover said, intends using the trade associations as one of the points of contact between the government and industry. The association executives expressed a willingness to coöperate fully and voiced the hope that such coöperation would bring a new era of understanding between the government and business.

Mr. Hoover expressed the belief that one result of coöperation by the department with the associations would be the furtherance of plans for giving wide distribution to helpful production and distribution statistics. He indicated that figures given by the industries to the department would be regarded as confidential and that use would be made of them in no manner that might be objected to by the industries.

New Officers of Cleveland Electrical League

At the recent annual election of the Cleveland Electrical League the following officers were elected to serve for one year from June 1: Harry Hutchisson, president; A. M. Collins, vice president; S. C. Hansen, secretary; J. E. North, treasurer.

The annual report shows the get together spirit of the League, as the following extract indicates:

"The work carried on by the League has been largely in the form of civic electrical improvement of the nature that is bringing more and better business to individual members.

"As concrete examples of such endeavors, the classes in salesmanship, industrial and commercial lighting exhibits and the electrical homes may be cited.

"The success of the various and epoch-making activities is due absolutely to the unflagging work of the many active members of the Electrical League. Every bit of the credit for the exceptional success of each of these several undertakings is due to the loyal, untiring efforts of these men."

Supply Jobbers Meet

The annual meeting of the Electrical Supply Jobbers' Association was held at Hot Springs, Va., May 25-27. J. L. Owen of New York was elected a committeeman in the Atlantic division to succeed H. T. Hochhausen, and Clarence Wheeler was reelected. The chairmanship of the Atlantic division, formerly held by F. E. Stow of Philadelphia, went to George L. Patterson of New York, and E. W. Rockafellow of New York, F. W. Bernardin of Kansas City and W. R. Herstein of Memphis were elected committeemen at large.

M. H. Aylesworth, executive manager of the N. E. L. A., made a talk on coöperative methods in upbuilding the industry and was invited to address the executive session to explain more in detail how the electrical supply jobbers can coöperate with the N. E. L. A. in furthering electrical development. At his suggestion the supply jobbers sent representatives to the convention of the N. E. L. A. in Chicago last month.

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Herman Plaut of New York City urged a greater interest by jobbers in proper electrical illumination and asked that they support the Illuminating Engineering Society through membership in that organization.

W. L. Goodwin described the plans which the Society for Electrical Development has in contemplation for expanding its work. Great interest was evinced by the jobbers in the society's new work and in Mr. Goodwin's leadership.

Samuel Adams Chase of the Westinghouse Electric & Manufacturing Company delivered an address on "The Straight Path", and an illustrated lecture on the hydro electric developments of the Niagara Falls Power Company was given by George S. Anderson of that company.

Convention at Quebec

New Manager of Society for Electrical Development Addresses Canadian Electrical Interests

The thirty-first annual convention of the Canadian Electrical Association came to a close Friday evening, June 17, with a banquet at the Kent House, Quebec, at which W. L. Goodwin expressed the wish that The Society for Electrical Development coöperate to a greater extent with the electrical interests of Canada.

In one of his characteristic talks Mr. Goodwin pointed out how the S. E. D. could be helpful to the Canadian electrical people in developing Canadian industry for Canadians. Mr. Goodwin said in part:

"My work in Canada has always been to the end of building the Canadian electrical industry in the interests of the Canadian public and Canadian concerns, and it will be my policy and the policy of The Society for Electrical Development to continue along the same lines.

"At the present time we have only a limited membership from Canada in the Society, but in view of the work I have done here in the past I am confident we will have an increased membership from the Dominion. It will, of course, be my desire that monies received from Canada shall be spent largely in connection with the development of the electrical industry in Canada. I use the term 'largely' advisedly because there are certain general activities which we carry on which accrue to the benefit of the industry throughout the world and Canada, of course, participates in any such general benefits."

After enumerating some of these general activities of the Society, such as the broad work of educating the public through the medium of articles in the daily newspapers, popular magazines and the trade press, Mr. Goodwin went on to point out that the Society was ready to render a more specific help to the Canadian electrical interests in assisting them in advancing their own industry. Subscriptions received from Canada will be largely devoted to this end.

Samuel Adams Chase also attended the Quebec convention, which gave to it the true ring of an old fashioned Goodwin-Chase get together meeting, such as have been conducted throughout the country for the past few years.

It is interesting to note that while the number of Society members in Canada is not great, they are all awake to the benefits to be derived from membership. In proportion to their number, Canadian members probably request and receive more special assistance from the Society staff than members south of the border.

Goodwin Guest of Honor

Gettogether Dinner Given by H. I. Sackett Electric Co. of Buffalo

W. L. Goodwin, Assistant to the President of The Society for Electrical Development, was the guest of honor at a dinner given by the H. I. Sackett Electric Company at the Lafayette Hotel, Buffalo, on the evening of June 13.

Mr. Goodwin discussed in detail the economic problems of the industry with special emphasis on the necessity for an understanding of the proper functions of jobber and dealer in their respective positions in the channel of distribution from manufacturer to consumer.

Commenting on the talks given by manufacturers' representatives at the dinner, Mr. Goodwin stated that he was particularly impressed with the fact that of the six manufacturers' representatives who spoke not one talked on his particular line. The keynote of all of the talks was policy—not merchandise.

Other speakers at the Sackett dinner were Henry J. Popkin of Shapiro & Aronson, C. J. Cooper of Wise-McClung Mfg. Co., W. O. Roach, Chicago Fuse Manufacturing Co.; H. E. Murphy of The Luminous Unit Co., R. P. Ingalls of the Simplex Electric Heating Co., A. McLachlan, Square D Company.

Large Contract Let in North Carolina

What is declared to be the largest electrical contract ever let in the state of North Carolina was secured on May 24 by A. R. Moffitt & Company, Fayetteville, N. C., when that firm was awarded the contract for installing electrical equipment in the Southern Furniture Exposition building at High Point, N. C.

The Fayetteville firm won over 157 competitors who submitted bids, most bidders being manufacturers' representatives. More than 1,000 electrical fixtures will be installed in the eleven story building, which contains more floor space, it is said, than any other commercial structure in North Carolina.

How Contractor-Dealer Should Advertise

At the regular meeting of the Independent Contractor-Dealers' Association of New York, presided over by William J. Shore, at the McAlpin Hotel on Wednesday, June 15, O. C. Small of The Society for Electrical Development talked on the subject of advertising.

The fact was brought out that the one big competition the electrical industry is up against is ignorance—ignorance on the part of the public as to what electric service means to it and the only way to overcome this is to advertise.

The point about which the address developed was the necessity to advertise as a body, in other words, coöperatively, because it must be realized that in the larger cities the average contractor cannot afford to invest a sum of money in purchasing newspaper space that will be large enough to attract attention, but if a number of contractors get together and contribute a reasonable amount to a common fund, an advertisement of commanding size can be placed periodically in the most satisfactory medium.

Facts were given and samples shown of the advertising being done by contractors in other cities and it was generally conceded that the contractors of New York must definitely decide to follow the lead given.

A committee was appointed to furnish a report as to what further steps should be taken.

Philadelphia Electric Club

Richard Spillane, in his column, "Men and Business,' in the Public Ledger under date of June 17, had this to say of the Philadelphia Electric Club and also of the son of a prominent member of the National Executive Committee:

The Electric Club didn't have a flag so the members chipped in and bought one of the most beautiful in all America. At their luncheon in the Arcadia yesterday it formally became club property, Lieutenant Milson, Canadian-born soldier of the World War, making the presentation address.

There was a religious solemnity to what he said.

It is hard, he explained, to leave the flag you are born under, but so much had he come to love this land of peace and liberty that it was not so hard in his case.

To him the Stars and Stripes had become something more than a flag, for it gave hope of taking fallen humanity out of the mists into the sunshine. He asked God's blessing on the flag and pledged that if danger surrounded it his life-blood would be given in its defense. He hoped the flag would become more beloved the world over. This would come to pass, he declared, if Americans were ever true to American ideals, were ever strong, ever courageous, ever apostles of the square deal, ever faithful to the gospel of justice and good will.

"The flag," he said, "is the symbol of the people. Upon you rests the duty and privilege of making it the hope, the inspiration of mankind."

Mr. Devereaux Recovery

Washington Devereaux in speaking for the club pledged its members to the flag and all it signified. He, too, dwelt upon the fact that fullest fidelity to the flag meant the bringing of honesty, justice, a square deal into the every-day life of the people.

And then, in telling of the long illness from which he has just recovered and how a man searches his soul at such a time, he unconsciously paid a remarkable tribute to himself; for he told of receiving while at Mount Clemens more than 3,000 letters of sympathy and good cheer from friends all over America, these friends ranking from workmen in the shops up to heads of industry, friends he had made in his more than thirty years in active business.

No wonder he got well.

* * *

Buddy Recognizes Car

A young man on his way to meet a relative soon to arrive in town stopped suddenly as he saw a Cadillac car standing near the Broad Street Station.

"What you looking at, Buddy?" the chauffeur inquired.

"At the dent in the radiator," the young man replied. "Would you mind looking under the spoke of the driving wheel and telling me if the initials 'J. F. B.' are carved there?"

The chauffeur looked and, sure enough, found the initials.

"Well, I'll be switched," he exclaimed. "How did you know they were there and what made you look at the dent in the radiator?"

"I drove that car in the Argonne," the young man said, "and I carved my initials under one of the spokes of the driving wheel."

"How come the dent in the radiator?"

"Deuce if I know," the young man said. "I had the car out one dark night. maybe I hit something. Next morning the radiator was dented. That car belonged to a man named Charles Therault or something like that, who is a New Englander, and he drove it in France before I did. I was with the Twenty-fourth Aero Squad over there."

"Well," said the chauffeur, "the old boat is still in service. I drive her for Colonel Reynolds, of the First Division, Camp Dix. See the Colonel's star?"

"Yes, I see it. So long, Buddy. Glad to have met you."

"So long."

The young Philadelphian was John F. Buchanan, Jr., son of the head of J. F. Buchanan & Co., electrical contractors, of 1715 Chestnut Street.

Missouri at the Convention

State Association is Preparing For an Unusually Big Delegation

The Missouri State Association is endeavoring to arouse interest in the Buffalo Anniversary Convention, and Secretary A. J. Burns has issued a folder and a letter to contractor-dealers in which he asks them where they will spend their vacations. The folder gives detailed information of the trip and is signed by Wm. F. Gerstner, president. The letter reads in part:

"Read the enclosed circular and I believe that you will decide there is but one place to go, and that is to Buffalo, via Chicago and boat (three days by boat) with plenty of opportunities to fish on the trip.

"The National Association of Electrical Contractors and Dealers are holding their twentieth anniversary in Buffalo and will welcome you at their meetings, also in having a good time.

"Many have never visited Niagara Falls. Those who have will wish to do so again as the wonders are always new, no matter how often you have visited them before.

"You can get to any place in the East from Buffalo, as there are always excursions to Boston, New York, Philadelphia, Atlantic City and other places of interest.

"The folder will give you the cost and time of going to and from Kansas City and St. Louis to Buffalo, either single or round fare trip, and the time limit which your tickets will be good for.

"Come and join us, it will pay you to make this trip and enable you to attack your business problems with renewed vigor on your return home. You are sure to learn new ways of solving your business problems and how to make a profit."

New Jersey State Convention

The semi-annual meeting of the New Jersey Association of Electrical Contractors and Dealers will be held at Asbury Park on Saturday, July 30.

The committee has prepared an interesting program, in which there will be a morning session for the transaction of business, and an afternoon session at which there will be an address by a speaker of national reputation, on the subject of "The Value of Advertising to the Electrical Contractor-Dealer," to be followed by a discussion.

After the session, recess of one hour will be declared to give the members and guests an opportunity to become better acquainted with each other. This is to be followed by the big feature which will be a baseball game between the contractors and jobbers.

After the ball game, there will be the usual banquet, to be followed by dancing. The ladies accompanying the members and guests will be well taken care of by the entertainment committee.

UMI

News Notes Concerning Electrical Contractor-Dealers

Business Changes, Store Improvements, and New Establishments Opened

Abbott-McIntyre Company is opening a new electric supply store at 52 West Gay Street, Columbus, Ohio.

Meyers & Hallock will open a new store carrying electrical supplies at 116 Broadway, Saranac Lake, New York.

Whitmer Electric Company has opened an electric supply business at 11817 Euclid Avenue, Cleveland, Ohio.

James Goodsir is reported to have opened a new electric supply store at Ellenville, New York.

Norbert Kneisel is opening an electric supply business at 10 Main Street, Hamilton, Ohio.

Milton Glickman is opening an electric supply business at 238 Warren Street, Hudson, New York.

Roush Baker Electric Company has opened a new supply store at Hillsboro, Ohio.

Winn Bros. & Harlow have opened a new electric store at 560 Massachusetts Avenue, Cambridge, Mass.

Southwest Electrical Supply Company will open a new store carrying electrical appliances at 7 East 19th Street, Kansas City, Mo.

Home Electric Appliance Company will open a new supply business at 433 Market Street, Steubenville, Ohio.

Klinck & Christensen are reported to have opened a new store carrying electrical supplies at Sheldon, Iowa.

Reddock Simon Co., Inc., are opening an electric business at 304 Bowery, New York City.

Paul Boggs is opening a new store carrying electrical goods at Baldwin, New York.

Case & Snyder will open a new electric supply and contracting business at Catasauqua, Pa.

Palmer Electrical Company has opened a supply store at 412 West 16th Street, Des Moines, Iowa. George E. Palmer is proprietor.

Wood Electric Company is opening a new appliance store at 10th and McGee Streets, Kansas City, Mo.

Willard McNeil is reported to have opened a new electric appliance store at 7th and Harrison Streets, Vincennes, Ind.

Robert Pane has purchased the electric supply business of the Home Electric Company and will continue to conduct same at 152 West Dominick Street, Oneida, New York.

Wm. Morris is going to open a new electric supply business in the Reed Building, Schuylkill Haven, Pa.

Davenport Electric Contract Company of which Heysinger & Hahn are proprietors, is reported to have opened a new store carrying electrical appliances at 320 Harrison Street, Davenport, Iowa.

Fred C. Lear has opened an electrical shop at 30 Maple Street, Salamanca, New York.

G. G. Carpenter has opened a new electric supply store at Flemingburg, Ky.

Greeneville Electric Company is opening an electric supply business at Greeneville, Tenn.

Loy Electric Company will open a new supply store at Lafollette, Tenn.

Sandefjord Electric Company is opening a new store carrying electrical supplies at 12 La Fayette Street, Valparaiso, Ind.

Rudy Lubering and Wm. Blersch have opened a new business carrying electric appliances at 319 Main Street, Quincy, Illinois, where the building is being remodeled.

Leonard A. Sylvia will open an electric store at 514 Pleasant Street, New Bedford, Mass.

O. E. Hassler is going to open an electric supply business at Winchester, Tenn.

Alexander & Blubaugh are opening a new store carrying electrical supplies at 217 North Michigan Street, Plymouth, Ind.

Home Electric Appliance Company will open a store at 15 Main Street, Zanesville, Ohio.

John R. Electric Company has opened a new supply store at 346 John R. Street, Detroit, Michigan.

G. W. Spencer will open a new store carrying electrical supplies at 444 Prospect Avenue, Kendallville, Ind.

Springdale Electric Company has opened a new supply store at Springdale, Pa.

W. C. Powe is reported to have opened an electric supply business at Newton, Mass.

Gainaday Electric Company of which John F. Maloney is proprietor, is opening a supply business in the Verder Block, Rutland, Vt.

Northwest Utilitor Company is opening a new electric appliance store at 619 East Fourth Street, Olympia, Wash.

Rayne and Dentger will open a new business, carrying electrical goods at McCarrell Avenue, Washington, Pa.

Fred Ernst has opened a new electric store in which a full line of batteries will especially be carried at 822 Commercial Street, Atchison, Kansas.

William Laing is reported to have opened an electric supply store at Berlin, Wis.

Tryon & Woodward have opened a new electric supply business at 27 East Garden Street, Pensacola, Fla.

Triangle Plumbing & Electrical Heating Company will open an electrical heating and supply business at 2008 East 55th Street, Cleveland, Ohio.

Peterson-Carlson Wiring Company are opening a new electric wiring and supply business at 1409 Market Street, Youngstown, Ohio.

Matthew Torpy is reported to have opened a new business carrying electrical supplies at 21 Elm Street, Danbury, Conn.

L. I. Waldham will open a new electric store in the Lohmann Building, Catskill, N. Y.

Louis L. Leuth has opened a new electric supply store at Ladysmith, Wis.

Crystal Electric Company, New York City, has removed to 325 East 149th Street.

Customers Crave It

The keynote of salesmanship is service—giving something that will benefit the buyer. Perhaps this service is better quality or lower price, longer credit, prompt delivery or helpful suggestions. It may be one or several of a dozen things, but it is always service—always something that appeals to the buyer's selfish desire for profit, or something which represents material gain.

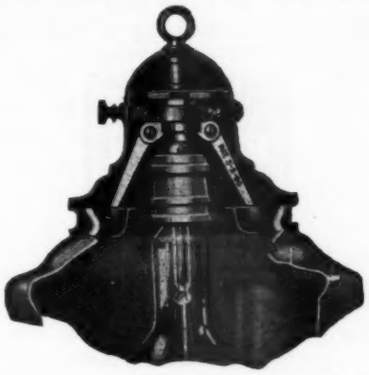
IS YOUR Universal Data and Sales Book kept up to date? You need it for buying, selling and estimating.

·MANUFACTURING·

A Department Devoted to the Latest Devices Used by the Electrical Contractor and Dealer

Safety-Board Holder

Some school directors were making a tour of inspection, and while assembled in one of the classrooms a large glass globe on one of the lighting units dropped without the slightest warning and came so near hitting one of the school directors that they, fearful of a like occurrence while children were in



the classroom, decided that some method must be provided to prevent similar accidents in the future.

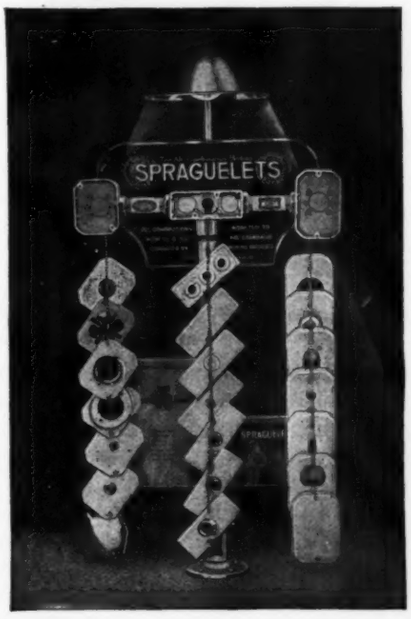
The result was the development of the Safety-Board Holder, which is herewith illustrated. The phantom view is a vertical section through this patented holder, and clearly illustrates how the mechanism works. Turning the knurled screw spreads the arms and clamps the globe between the curved shoes, attached to the arms, and the inside of the holder.

The ordinary three or four screw holder provides only a few points of contact, and unless all screws are carefully adjusted under the lip of the globe, the glass will not hang straight. Unequal stresses are produced by setting up one screw tighter than the others, and when the bowl expands, due to the heat from the lamp, breakage results. The two curved shoes of the Safety-Board Holder extend nearly around the inner surface of the neck and provide a surface contact instead of a point contact as in the case of the ordinary screw holder. Being similar in form and of the same material as the holder, the expansion due to the heating of the holder and shoes is practically the same. Hence, no unequal stresses are produced.

The electrical contractor-dealer can buy the complete unit, including chain, canopy, and glassware. He may have it wired, or not wired, and equipped with any glassware that he desires. Manufacturers of chandeliers and glassware may purchase the holder alone and use it in any manner they desire. Just at present it is being manufactured by several companies in the 6-inch size and those desiring more detailed information and prices should make inquiries through the Beardslee Chandelier Mfg. Co., 216 So. Jefferson St., Chicago, who are responsible for its development and perfection.

New Exhibit Demonstrates Interchangeability

Is the well known wall exhibit board about to become extinct? An enterprising manufacturer of wiring materials recently devised an attractive



means of transferring its "still life" exhibit from the contractor-dealer's wall to a live exhibit on his counter, as shown in the accompanying illustration.

One of the most important features of this exhibit is that it permits the interested customer to try with his own hands various combinations of the fittings or devices under consideration, so that he is no longer obliged to look at the separate parts from a distance and visualize their relationships.

This display is illumined so that it forms a useful purpose on the counter or table of a distributor or contractor-dealer in lighting the counter at a place where more light would be welcomed by the clerks.

Those who have seen this exhibit predict that it will prove a very effective silent salesman, because it capitalizes the drawing power of illumination and that curious human instinct to acquaint itself with products and possibilities through direct handling.

Patents are being applied for on the general idea of arranging exhibits in this manner where it is desired to demonstrate the various combinations of interchangeable parts.

Water Heater

Two improved models of the "Sepco" automatic electric water heater, both rated at three gallons capacity have just been put into production by the Automatic Electric Heater Company of Warren, Pennsylvania. These heaters are designed for use in offices, stores, rest rooms, lavatories, doctors' and dentists' offices, barber shops, bungalows, soda grills and wherever only a moderate quantity of hot water is needed.

Similar heaters of 8, 20 and 40 gallons capacity, have completed their field tests to the satisfaction of the manufacturer and will be placed upon the market as rapidly as possible. The full line of Sepco Products will doubtless be available by fall.

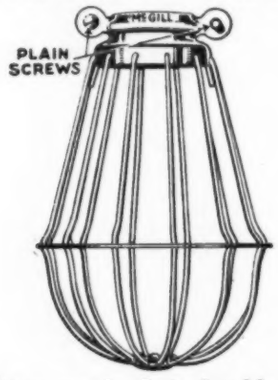
The new Sepco Heaters at present offered and illustrated herewith are 24 inches high, 14 inches diameter and weigh 60 pounds boxed. They are identical in all particulars excepting the heating elements; the model designated as D-360 having a 600 watt unit which may be attached to any lamp socket, while the D-310 contains a heating element of 1,000 watts and is attachable to outlets provided for that capacity.

The 600-watt size requires one hour to heat the original three-gallon tank full of water from 60° to 140°F. This will give five gallons of water at 95°-110°F. The cost of this original heating is three cents, with current at five cents per kilowatt hour. The cost of maintaining the temperature constantly at 140° against loss of radiation amounts to but five mills per hour, while water drawn off intermittently and used at 100°F costs but six mills per gallon. The other Sepco heater of this type, D-310, having a 1,-000 watt element, heats the original tank of water in but 35 minutes and costs slightly less both for maintenance of heat against radiation and for heating the water used.

New Lamp Guard

The McGill Manufacturing Company of Valparaiso, Indiana, has placed on the market a new lamp guard called the Gripon.

This new device is a closed bottom,



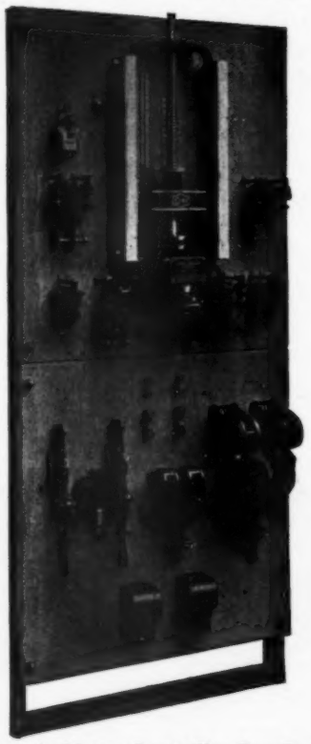
nonlocking guard. It is durably made, with a heavy steel collar that assures a rigid grip on the socket, and the screws cannot drop out. It is made in all sizes to fit brass, porcelain, and composition sockets.

The new Gripon is a companion to the Loxon, manufactured by the same company. The Loxon eliminate needless waste by saving lamps and enabling them to burn their full life.

These lamp guards also reduce fire danger from hot or broken lamps, besides preventing lamp breakage. They will pay for themselves many times over in factories or places where exposed lamps are used.

Controllers for Printing Presses

The Cutler-Hammer System—"Safest in the World"—is the name designating the new line of controllers for high speed web printing presses recently developed by The Cutler-Hammer Manufacturing Company of Milwaukee and New York. These new controllers



C-H Double Motor Controller Panel of the Full Automatic Type Used with High Speed Newspaper Presses

supersede a previous line of similar apparatus. A typical controller of those constituting this new line of control apparatus is shown in the accompanying illustration.

This is a double motor controller panel of the full automatic type. The press is driven by motors, a main driving motor and an auxiliary slow speed motor, the latter being used for "inching" operations. The acceleration of the main motor is governed by a motor-driven cross head, which is mounted on the upper controller panel. The contact shoes exert sufficient pressure against the contact segments to prevent overheating, and a sufficient number of steps are provided so each change in speed is small and arcing is eliminated between the contact segments.

Full protection to the motor and driven machinery is provided by the use of overload relays, voltage failure relays, paper brake relays, etc. All movements of the press are controlled by a push button station, which is coordinated with a signal system, consisting of both audible and visible signals.

New Red Seal Battery

The Manhattan Electrical Supply Co., Inc., has added another unit to its Red Seal Dry Battery line. The newcomer is known as the Red Seal Utility Battery and is made up of two stand-

ard size "A" Red Seal Cells properly connected and enclosed in a hermetically sealed, moisture proof case, the binding posts alone protruding through the sealing compound.

In many instances one dry cell alone will not supply sufficient energy to do the work required while two will suffice. Where such a condition exists it is necessary for the user to properly connect the two cells together as well as the line terminals.

The Red Seal Utility Battery does away with this trouble as well as the chance of improper connections as it is made up of two standard 2½ in. x 6 in. size "A" Red Seal Cells properly and permanently connected in series, perfectly insulated from each other and hermetically sealed in a moisture proof container. Each battery has a metal loop for suspending from nail, screw or hook, a convenience that will be more than appreciated.

The Red Seal Group is now composed of the original Red Seal cell in round or square cartons with flush top carbon supplied with the standard knurled nut binding posts, or spring clip binding posts, it is also made with

an all-Redi Connector permanently attached to the Zinc cup, eight differently assembled Red Seal Sparkers; and the Red Seal Utility Battery, so now there is a Red Seal for every battery purpose. All the different types can be combined in barrel lot assortments.

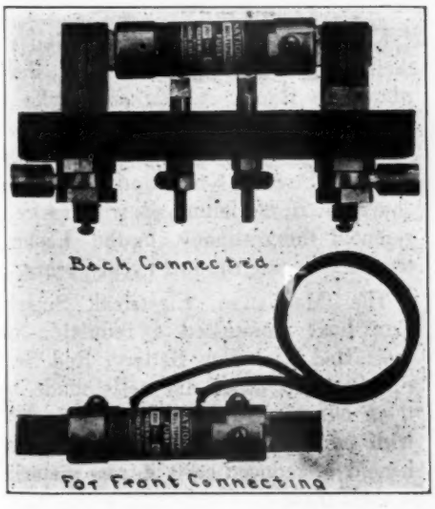
National Multiphase Renewable Fuse

Large industrial plants have been demanding and electrical manufacturers have been working for years to develop a means to prevent Multiphase, (Polyphase) motors running single phase. Motor manufacturers have devoted most of their experiments to attempting to utilize a relay device in connection with the controlling apparatus, but inasmuch as the blowing of one fuse in a Multiphase circuit does not operate the circuit breaker or overload release, the motor invariably runs single phase. More motors burn out for this reason than from any other cause.

It is impossible to develop any kind of a relay system, as the voltage across the lines when one fuse blows drops to such an extent that there is not enough energy to energize the coils.

The Federal Electric Company of Chicago has developed with basic patent protection a low voltage auxiliary coil which is embodied in the renewable cartridge of National Renewable Fuses, and as the cartridge can go into the case in but one position, it easily makes the auxiliary connection with the fuse case itself.

Leads are then brought out for connecting the inter-phase circuit in either delta or "Y" connection and is made with either wire connections attached to the case for front connecting or auxiliary knife-blade connections are attached for back connecting on panels, switchboards, etc.



National Multiphase Renewable Fuse, as the new device is known, serves two purposes. First, as a fuse it is so constructed that it withstands the high starting current of motors, yet protects the running load within the limits prescribed by the Underwriters' Laboratories, Inc. It is powder-packed, which is the best known fuse practice. It has the metallic "tell-tale" indicator which shows in plain view upon the outside of the fuse the rated amperage of the element with which the fuse is loaded.

As the fuse is made for operation on Multiphase circuit, it acts as a circuit breaker, that is, when one fuse blows, the auxiliary device in the National Multiphase Renewable Fuse makes one of the other elements in one of the other fuses blow, thereby breaking the circuit entirely and eliminating the possibility of the motor running as a single phase motor. This is really a time limit fuse and is absolutely fool-proof.

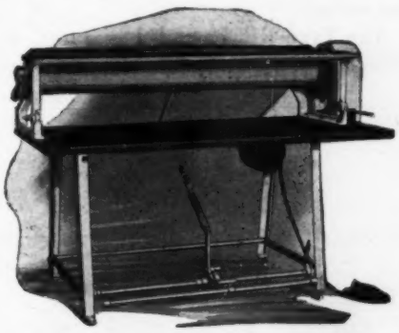
New Ironer

That there is a very large market for electrical appliances in which are combined substantial construction, correct principles of design and low price, is a fact which is being recognized generally by the electrical trade. During the "flush" times, now but a memory, the question of price seldom entered into consideration, but with the return to what politicians call "normalcy" (and what the rest of us call by a shorter and less polite name), price is an all important factor in volume sales.

The Cottage Ironer, recently placed upon the market by the William G. Yates Company of Cleveland, was designed and is being offered as a fast selling, popular priced appliance. As the illustrations reveal, it is extremely simple in design, yet according to the manufacturer it not only embodies every desirable feature found in many larger, heavier and more expensive machines but has a number of exclusive advantages of its own.

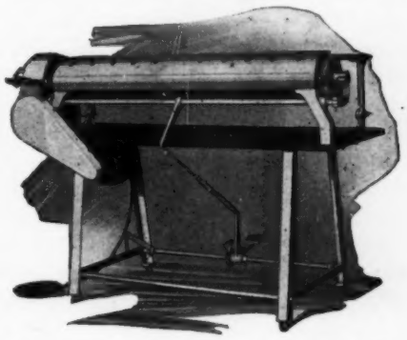
The Cottage Ironer, is, it is claimed, as substantial and sturdy as a small family ironer needs to be. Though weighing but 142 pounds, it has a 46-inch roll, ample power, and sufficient pressure to accomplish any ironing likely to be attempted in the course of ordinary household use. Weight has not been sacrificed at any point where strain occurs, nor has any detail been slighted which is needful or desirable for practical service.

The particular and exclusive merits claimed by the Yates Company for this



appliance include an open end roll over which skirts and ruffles of any width can be ironed; a lift of four and one-half inches between roll and ironing shoe which not only facilitates cleaning and waxing of the shoe.

Extensive field tests have preceded the placing of the Cottage Ironer upon the market. William G. Yates, head of the company which is making and marketing the device, has had long experience in the electrical jobbing and manufacturing fields, and fully realizes the danger of offering for sale any household appliances from which the "bugs" have not been entirely eliminated. Therefore, this ironer has been



subjected to the most rigid tests, has been given long, hard usage in a number of hand laundries as well as homes, and is claimed to have stood up under abuse and mishandling in a manner not only gratifying but actually surprising to those interested.

Threaded Fixtures for Heavy Duty

The by-products of manufacturing processes in many industries form dense clouds of heavy dust and other foreign material, which settle upon the reflectors and lamps, necessitating frequent cleaning in order that a high level of illumination may be preserved.

Unless special provisions are made for cleaning, the neglect results in seriously impaired illumination, and in time brings about deterioration of the lighting units.

The Type RR Threaded Fixtures, developed by the Benjamin Electric Man-

Type RR Unit With Dome Reflector

ufacturing Company, Chicago, overcome any difficulties involved in cleaning, and present several other very convenient and highly desirable features. These are made with cast hoods designed to accommodate threaded reflectors of the R. L. M. dome standard, bowl and symmetrical angle type.

The threaded connection permits easy removal of the reflector from the hood for cleaning. That is, the reflector

Broken-away View of Type RR Unit

simply unscrews from the hood. If, in the event that it is expedient to install the hoods and at some later date to put the reflectors in place, the assembly is easily and readily made. If at any time it should become desirable to change the type or style of reflector the change over is easily made without in any way disturbing the original hoods or wiring arrangements.

The cast hoods are furnished with standard tapping for one-half inch iron pipe stem, but will be supplied with three-quarter inch tapping. Benjamin two-piece, easy-to-wire keyless socket, with lamp grip or locking type socket are furnished.

Condensed Notes of Interest to the Trade

The Majestic Electric Instantaneous Water Heater delivers pure hot water instantly, at any hour of the day or night, where hot water is desired in limited amounts. It can be attached (without the aid of tools) to any ordinary water faucet. Manufactured by Majestic Electric Development Company of San Francisco.

The Adapti Company, Cleveland, Ohio, has purchased the property and buildings formerly occupied by the Cleveland Refrigerator Company, 72d Street and Oakwood Avenue. The new factory gives the company four times the manufacturing space it has at present, and the vacant ground included in the purchase will permit of liberal future expansion for years to come.

The gross earnings of the Westinghouse Electric & Manufacturing Company from sales billed for the year ending March 31, 1921, were, as shown by the company's annual report, $150,980,000, which is an increase of $15,000,000 over the gross earnings of the previous year. The manufacturing and selling cost was $138,774,000; and the net income available for dividends was $12,618,000, or 16.8 percent on the company's capital stock. Dividends at the rate of 8 percent per annum were paid during the year on both the preferred and common shares of stock.

Pass & Seymour, Inc., announce that L. L. Parkinson has been appointed Chicago district sales manager to succeed Wm. Hall, Jr. Mr. Parkinson brings with him a wide electrical experience, having been with the Westinghouse Electric and Manufacturing Company for fifteen years. The past eight years he was branch manager of Westinghouse Lamp Co., at Detroit.

"Hot Water by Wire" is the title of a recent publication which describes the new D type Sepco Automatic Electric Water Heaters of three and eight gallons capacities manufactured by the Automatic Electric Heater Company of Warren, Pennsylvania.

"C-H Elevator Controllers" is the title of a book just published by The Cutler-Hammer Mfg. Co. In addition to a description of the various C-H elevator controllers and accessories, the book contains a discussion of the types of motors best suited to elevator work and an outline of the usual method of selecting motors of the right horsepower and starting torque to insure satisfactory performance. Tables giving motor, fuse, and wire ratings are also included. An index makes it easy to turn to any particular section of the book.

Space heaters for commercial and domestic heating are illustrated and discussed in a leaflet just issued by the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. The construction and distinctive features, as well as the application of these heaters, are given, together with over one hundred specific uses.

A new Laun-Dry-Ette folder has been prepared by the advertising department of the Laundryette Manufacturing Company, Cleveland, and is now being supplied to dealers. The folder is entitled, "The Laun-Dry-Ette Way On Washday", and is printed very attractively in blue and white. The folder was brought out to show the advantages of the Laun-Dry-Ette way of washing over the old fashioned way.

Economy Fuse & Manufacturing Company of Chicago, pioneer manufacturers of renewable type cartridge and plug fuses, has announced a sweeping reduction in prices of Economy renewable fuses and "Drop Out" renewal links. The cut in prices is shown to be in harmony and keeping with the spirit of the times, and is made possible chiefly by the enormous manufacturing facilities and efficiency of the new home of Economy fuses, Greenview Avenue at Diversey Parkway, Chicago.

The Westinghouse Electric & Manufacturing Company announces the opening of a Service Department and Repair Shop at 1535 Sixth Street, Detroit, Michigan, to install or repair electrical or steam apparatus either in the shop or in the field.

Keeping step with the expansion of their manufacturing facilities at their plants in Rome, N. Y., and Buffalo, N. Y., the Rome Wire Company has opened district sales offices at 50 Church Street, New York City, in charge of H. S. Hammond, who has represented the company in the Eastern territory during the last twenty years.

The Manhattan Electrical Supply Co., Inc., announced a reduction on their Red Seal Dry Battery, Red Seal Sparker and other dry cells made by them effective June 1. This is in line with their general policy of giving the benefit of reduced costs in raw material to their trade.